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EXTREME HYPERTROPHY AND RUPTURE OF THE SPLEEN.

BY W. WOQDS, F.R.C.V.S., WIGAN.

I HAVE forwarded to the Brown Institute a spleen which, so far as weight is concerned, is to me a perfectly unique specimen, as, when removed from the carcase, it weighed no less than 131 lbs.

There is little history attached to the case. It was that of a mare, apparently in good health, with no external manifestations about the abdomen of the immense tumour contained therein, and to see her I was hurriedly called a few days ago. I found upon examination that she was dying, with well-marked symptoms of internal hæmorrhage. She died during the course of the day. A *post-mortem* examination revealed the spleen now forwarded, in which was a rupture about two inches in length, and from which the mare had bled to death. I may mention that, for some weeks previously, the mare had been suffering from occasional slight hæmorrhage from the vagina, which was attributed by the owner to some injury having been inflicted by the entire horse during the service of the mare, some two months previously; with this exception, she has apparently enjoyed good health, particularly for the last six months. From a cursory examination, the chief change in the spleen seems to be a great increase both in the relative and absolute amount of connective tissue.

[Examination of sections of this spleen revealed nothing except simple hypertrophy of its tissue. The organ in this instance must be pronounced the heaviest on record, as a careful search through home and foreign veterinary literature does not afford a parallel case. Hering gives an instance, which he considers extraordinary, in which the spleen weighed 62½ lbs., the horse, during life, offering no indications of ill-health; and Gurlt describes another case in which the spleen weighed 37 lbs. The average weight of the normal spleen is about 32 ounces. This may, therefore, be pronounced the most extraordinary case of Splenic Hypertrophy ever reported. Even when cut up into pieces for facility in weighing, on arrival at the Brown Institution, it weighed 126 lbs.

With regard to symptoms, it is very probable that a careful examination made during life, had there been any reason to suspect such a condition, would have discovered distention in the left hypochondriac region, and dulness on percussion. In recorded cases of Splenic Congestion, accompanied by hypertrophy of its tissue, hæmaturia, enterorrhagia, and epistaxis have been sometimes noted.]

SEVERE INJURY TO THE CORONET CAUSING EXTENSIVE EXOSTOSIS AND ANCHYLOSIS.

BY JOHN FERRIS, F.R.C.V.S., A.V.D., ATHLONE.

Case 17, *H Batt., 2nd Brigade, R.A., Black Gelding, aged* 12.

December 15th, 1881. Contusion off hind foot, the coronary substance is very painful on being touched, the leg is swollen, and the animal is too lame to walk. The cause of the injury cannot be satisfactorily accounted for. Give bran diet, remove the shoe, and well foment the injured part.

16th. Worse: the leg is more swollen, the animal is continually lifting up the foot in great pain. Foment constantly during the day.

17th. The horse is suffering severely from irritative fever, pulse 67, respiration 29. Give Pot. Nit. ʒij in water to drink.

18th. There is considerable swelling round the coronet, and

the pain is still severe, pulse 69, respiration 31. The animal lies down frequently, and feeds a little on bran mashes, but eats very little hay; the abdomen is a good deal contracted.

19th. No improvement, continue the fomentations.

20th. No relief, pulse 69, respiration 27, mouth very hot; there is evidently an abscess forming on the outside of the coronet.

21st. No improvement, pulse 68, respiration 25.

22nd. The abscess has burst, and there is a free discharge of matter. Keep the foot in a bucket of hot water.

23rd. No relief, matter still flowing.

24th. No improvement, pulse 69, respiration 27.

25th. Less constitutional disturbance, pulse 61, respiration 23; the horse lies down a good deal during the day; give a few scalded oats with the bran mashes.

26th. The swelling extends all round the coronet, and the leg is still swollen: the pain continues acute.

27th. Pain unabated, pulse 63, considerable discharge from the wound, chiefly matter mixed with blood. Encourage the discharge with fomentations.

28th. Slight improvement though the wound is not looking healthy.

29th. Improving, in less pain.

30th. Feeds better, wound looks healthier.

31st. Pulse normal. The horse has fallen away considerably in condition.

January 1st. Relapse; pulse 68, pain much increased. Give Pot. Nit. ʒij in water to drink.

2nd. No improvement, continue to keep the foot in a bucket of hot water, and give more scalded oats.

3rd. No improvement, lies down longer at a time.

4th. Placed the animal in slings. The irritative fever increasing, pulse 79, respiration 27, unable to bear any weight on the leg.

5th. No improvement, pulse 78, respiration 25.

6th. The horse rests himself fairly well in the slings, but there is no improvement. Apply flannel bandages to the coronet and leg, keep the parts wet with hot water during the day.

5 p.m. There is a synovial fluid mixed with blood flowing freely from the wound, the animal is in intense pain: the joint has evidently been extensively injured. Pulse 71, respiration 23.

7th. About the same; give oats during the day, and bran at night; the horse is in very low condition.

5 p.m. The animal stands in the slings on three legs, and will not rest himself in them properly.

8th. Much worse, prognosis unfavourable, pulse 84, respiration 27, irritative fever much increased, profuse discharge from the wound. On removing the animal from the slings he fell down quite prostrated.

2 p.m. No relief, lies down quietly.

5 p.m. Slight improvement, continue fomentations throughout the night, pulse 81, respiration 27.

9th. Pulse 75, respiration 24; feeds a little; give dry bran instead of mashes, as he eats it better, give also a few carrots. The system has suffered severely from the irritative fever, and there is great prostration.

4 p.m. Pulse 73, respiration 18, less fever, unhealthy discharge from the wound.

10th. Less constitutional disturbance, pulse 72, respiration 21. Give change of food, dry corn and good hay; lies down frequently, and remains quiet when down.

11th. Constantly twitching up the foot when standing; pulse 70, respiration 23.

4.30 p.m. About the same, feeds better.

12th. Slight improvement, pulse 66, respiration 20, not so much discharge from the wound.

4.50 p.m. Pulse 63, respiration 23.

13th. About the same, pulse 65, respiration 22.

4.20 p.m. No change for the better, irritative fever continued, pulse 67, respiration 25.

14th. The animal is much emaciated, give extra food, both corn and bran.

5 p.m. Feeds better. The leg is less swelled.

15th. Pulse 68, respiration 25.

5.20 p.m. The horse is still in great pain.

16th. No relief, pulse 67, respiration 23.

5 p.m. About the same, feeds fairly well.

17th. Pulse 61, respiration 22.

5 p.m. No improvement generally, but the wound looks more healthy, and there is very little discharge from it.

18th. Pulse 58, respiration 17.

5 p.m. Slight improvement.

19th. Improving slowly, pulse 54, respiration 18, feeds better, the wound appears healthy.

20th. Keeps the foot in the bucket of hot water of his own accord.

21st. Puts a little weight on the leg.

22nd. Abdomen less contracted, feeding better, and the foot less painful.

23rd. Pulse 57, respiration 19, the hot water affords great relief.

24th. Improving steadily, pain decreased, the swelling subsiding, pulse 51 only.

25th. Wound fast healing. The horse puts a good deal of weight on the foot, and walks with some difficulty.

26th. The irritative fever has reduced the animal to a skeleton; if he had not fed fairly well, he could never have borne up against it. Give bran and corn diet.

27th. The seat of the injury extends all round the coronet, and the joint is extensively implicated.

28th. There is still considerable enlargement and inflammation in the parts.

29th. The inflammation is subsiding.

30th. The swelling is decreasing, the condition is improving.

31st. The wound has healed, there is much swelling round the coronet which is partly osseous.

February 1st. There is an exostosis on the coronet about the size of a large ringbone, there is also anchylosis of the joint. Hot applications afford relief.

15th. There is still sub-acute inflammation going on in the parts.

27th. The joint is less stiff, and there is less heat in the parts. Give about a quarter of an hour's exercise daily at a very slow pace, and apply bran poultices during the day.

March 11th. Absorption has diminished the osseous deposits. Increase exercise to half an hour daily.

17th. Walks better, though still very stiff.

27th. Slight improvement. Give half an hour's exercise morning and evening.

May 16th. The exercise and the poultices have constituted the principal treatment since the 27th February; there is now a marked improvement, the horse can walk and trot practically sound. Increase exercise to an hour morning and evening.

31st. The exostosis has decreased. It will appear that mechanical action in the joint, brought about by gentle exercise, accelerated the absorption, while the poultices soothed the changes occurring in the tissue elements of the inflamed parts.

June 27th. The horse is going sound, and doing his duty as well as he did before the injury.

BASES OF CONTAGION OF SPECIFIC DISEASE—PRINCIPLES OF PREVENTION.

BY RICHARD W. BURKE, M.R.C.V.S., A.V.D., LIMERICK, IRELAND.

IT is not too much to say, I think, that in the interpretation of the phrase "spontaneous generation" which at present obtains, quite as much as in its right application, the one thing conspicuous is the chaotic confusion of the conceptions of it by various persons. And as it is not in the nature of things that we should all agree in holding the same opinions deduced from a consideration of certain *data*, it is my determination to look to these latter alone, and to allow them to speak for themselves. Questions of great scientific moment were never yet settled by the acceptance of the extreme views of some one great authority in opposition to those of another, and *vice versâ*, but by each man placing before himself the facts, and thus deciding the respective merits of the *dicta* of contentions of disputants, as well as forming for himself original views of the matters in issue. The mere opinion of one authority is no more a guarantee of its genuineness to the student of pathological science, than is the stamp of the Bank of England a sufficient warranty to those who may attempt to

utter its notes. And the entire subject is so involved in the mists of uncertainty, that the sun of science must needs pour his fiercest rays on it if it be desired to dispel these noxious exhalations. "Non enim tam auctoritatis in disputando, quam rationis momenta quærenda sunt." Still, a great many are afraid to question what others who speak as having authority declare to be right. And so we at present find that, however hollow and unsupported a theory, provided it is only backed up by some so-called authority, it is destined to be extolled by a no narrow section of our unthinking community, and we have a contest in which truth can be victorious only by accident.

We are never so likely to settle a question rightly as when we discuss it freely. We are most likely to form just opinions when we have no other wish than to know the truth, and are exempt from all influence, either of precept, prejudice, or preconception. Theory must be approved or condemned according as its effects in their application to practice shall appear to be justifiable or not. But the difference between rules drawn from practice and rules deduced *à priori* has, from the first, been variously represented, but never more than in the course of recent discussions. We shall therefore make no apology for devoting a brief consideration to the discussion of this interesting and most important question.

The question of spontaneous generation of a *case* of disease has merged, we know not how, into that of the spontaneous generation of the *seed* of disease—and this makes a difference that cannot be too clearly borne in view. The germs of disease assuredly exist at all times and in all places, though their numbers are determined by the conditions surrounding them, namely, those of *climate*, *soil*, and *hygiene*. Hence we find that Rabies is seldom to be met with in Ireland, while cases of Cattle Plague are equally as rare in England, and belong more properly to Russia, India, and other countries. So also the ova of reptiles refuse to select Ireland for a "happy hunting ground"; while the palm-tree is not met with in the colder northern hemisphere, except it be in hot-houses.

The recent resumption of the subject of the origin of specific disease from two opposed platforms, shows to demonstration the

desire of opponents of the middle course of things to live henceforth. But theory and practice have alike taught us the utter impossibility of the success of vain endeavours to draw a hard and fast line of demarcation in the study of disease, and those who persistently continue to pose either as ultra-spontaneists or ultra-contagionists must finally lose the scanty foothold of toleration they now enjoy, and, from ever leaning at one time to this side and at another to the side opposite, they will in the end prove but poor representatives of either. They will misunderstand the position of others generally, and their own in particular.

One respectable enthusiast and seeker after truth, in a paper which he lately contributed towards this subject, from which I happened to gather but little that was new to the profession, assured me that the number of *amateur* ovarists (followers of the "micrococcus theory" of specific disease) was at this time immense; and that the difficulty of distinguishing these persons, to whom love for mere theory had rendered the study necessary, from such as were pursuing it with a view to practice, occasioned him mental trouble, and aroused within him the most burning indignation! This invidious commentary, considered in its application to its author, is neither tolerant nor argumentative.

Without taking it upon ourselves to express any opinion on those who take up the above anomalous position, we will content ourselves with just mentioning that two at least of the senior professors * of our schools have refused to lend their countenance to either of these doctrines, when expressed in regard to the mode of inception of specific disease. There can be no question that this refusal to recognize a controversy that is seemingly as interminable as it undoubtedly is absurd, will not be without its salutary effect, while it has resulted in a tolerably satisfactory solution of a difficulty that had nothing of the practical in it, and the endurance of which has not succeeded in effecting that saving to the country it was promised to do. And I am prepared to substantiate what I assert. I would ask, What has the exclusive contagionist, for example, done in regard to epizoöties of

* We allude to Professors Williams and McCall.

Cattle Plague, say, when considered from the point of view of indigenous disease? With all the precautions for the prevention of contagion that have been taken, the disease has nevertheless mocked their efforts and snatched its prey, while it has desolated every part of the country, or a certain radius thereof, *simultaneously, and not by a gradual process of contagion from animal to animal being effected.* And the same may be said of all kindred maladies. I repeat, that if this matter be not duly considered, or if it be evaded, the natural result must be, that instead of the unity, we must inevitably witness the total separation of two bodies that now needlessly oppose each other.

A large amount of imagination, it will readily be seen, is not requisite to recognise the fact that disease germs must have co-existed with other germs higher in the scale of existence, such as those of parasitic germs, whose life-history is distinctly traceable, as well as those of creatures higher still, and that these existences must have begun simultaneously. Of course, knowing as we do that we can find many varied maladies, each of which is due to an unique species of germs, it follows naturally that there must be as many species as diseases. And in the face of these facts there is yet an absurd contention that the existence of disease in one animal is distinctly traceable to contagion from one antecedently affected, *as if it was impossible that the first animal sufferer should not itself have been made the primary habitat of the germs.* In those cases, again, where they have been unable to trace the source of the antecedent contagion, they invariably fall back upon the only mainstay that remains to them, and attribute the malady to spontaneous generation of germs, that is, to the springing into life of germs from inert matter! And considering the knowledge that these germs do exist, and do attach themselves primarily to animals, is it not incomprehensible that when the source of contagion cannot be traced the malady should be placed to the account of germs *de novo?* In the case of any disease, the animal suffering from it may have received it *de novo*, but, at the same time, that is no proof that the germ itself is generated *de novo.* This is the point of my contention, and the legitimate centre on which the interest of my subject revolves. And we are happy to be able to add that since our last com-

munication* on this subject, the weight of Professor Williams' authority has been especially thrown in with us, for he has maintained that although it is possible for a case of disease to originate *de novo*, as the result of what I have termed "primary contagion," this is not so with a germ. Ultra-contagionists, when they ascribe every case to one antecedent, unwittingly involve a sacrifice to the question of cases the result of primary infection.

Further, it has been maintained by such eminent and revered authorities as the famous physician Dr. Guy, and our own Professor Dick, that precedent contagion was not necessary to be pointed out in the understanding of the origination of specific disease; and yet our younger contemporaries who are unable to grasp a great part of what these men taught have attempted to fling the mud of ridicule at them. Truth, however, though long suppressed, must eventually burst the bonds of those who would keep it under, and will then appear before us with double its past vigour and brightness. Every attempt to suppress truth acts upon the opinions which have been expressed in favour of it like pruning upon vigorous plants, "they grow the stronger for it." What Professor Dick said was one thing; what his critics made him to say quite another. Let us take an illustration of this and leave our readers the judgment on the facts. Professor Dick maintained that a case of Rabies in one dog was not necessarily to be always attributed to a bite from a dog antecedently rabid. Now, mark what his critics have distorted this, simplicity itself as it is, into. They have had the audacity to assert that the learned professor contended that Rabies was occasioned spontaneously in the ordinary acceptation of the term, thus leaving the unwary reader to infer that he included the *germs* of Rabies as well, as having arisen spontaneously. From what I have already had to say it will easily be seen, therefore, that what the professor really meant was, simply that the medium of Rabies was not necessarily confined wholly to the *saliva*, but had, in common with it, that of the atmosphere as well.

Our critics, however, have not rested here. They have gone a

* "Disease-Germs *sui generis* the Essence of Contagion, and Disease-Germs Carriers of Antecedent Contagion," VETERINARY JOURNAL, 1881.

step further, filling up the measure of their iniquities as they have so done, and have even denied the very existence of the germs. "If there is a vast number of germs floating in the air, as alleged, why *ne pouvons nous pas les voir?*"—is one of the questions by which they twit their adversary. It now remains for me simply to add that what Professor Dick asserted "theoretically" has, in the present age, been experimentally demonstrated by Tyndall,* who, by the aid of the electric beam, rendered manifest the bacterial presence. Dr. Beale,† who has made the properties of living matter an especial study, and has well-nigh exhausted the subject, has merely modified this latter in one point, by maintaining it to be impossible for mature bacteria to exist in wholly dry atmosphere, for as living matter, always having a certain amount of water in it, the extreme dryness would, by removing this liquid, render life extinct. But on the other hand, he admits that the "*germs* of bacteria may exist in countless multitudes in the atmosphere, deposited in and upon the insoluble particles of various kinds which are always present. These, under favourable circumstances, will germinate, and the resulting bacteria grow and multiply. Besides, germs exist which are so minute as to be perfectly invisible when first formed, even under the highest magnifying powers yet made. They grow, however, and, after a time, become large enough to be distinctly visible." And other experiments more recently carried out have been the means of demonstrating their existence in moist air,—which only go to prove the fact that their existence is governed by qualifying conditions. This notwithstanding, we cannot consider the above even as a discovery of to-day, for we find Hippocrates‡ himself saying that "Alterations and variations of the seasons do most especially bring forth diseases. All diseases are caused in any time of the year, yet some are caused and stirred in some one time more than in another."

It has been asked why, if these bacteria always exist and everywhere, are not all afflicted by disease? The answer is very

* "Notes of Lecture on the Germ Theory," by Professor Tyndall, F.R.S., LL.D., at Royal Institution, London, 1877.

† "Microscope in Medicine," by Lionel S. Beale, p. 144.

‡ "Mellificium Chirurgiæ," by Dr. James Cooke, of Warwick, edited by Dr. T. Gibson, M.D., F.R.S., p. 442, 1675.

simple. Certain species of bacteria do exist everywhere, but these are not all disease-producing bacteria—these germs that are so plentiful are as harmless as plentiful. It is only where the conditions, as bad sanitary arrangement, etc., exist, that the noxious bacteria make their way thither, and should the conditions continue they naturally thrive, and perhaps desolate the surrounding region. It is no more reasonable to suppose that because the germs of bacteria always exist they must necessarily always produce disease any more than the germs of parasites should always occasion general parasitic disease. The numbers of germs, as I have said, are governed by surrounding conditions, and these germs must take their chance.

Principles of Prevention.

The Ultra-contagion Commission may evolve some ideas as to the mode of suppression of specific disease; but it is open to doubt as to whether, so far, any one of the many persons who have advocated the discardance of the theory of "primary contagion" of maladies indigenous to certain countries are possessed of a glimmering of a notion of what the best mode of suppression should be. The visitation of our country by foreign scourges occasionally imported hither will not, I think, contribute to the elucidation of this knotty question, but will, I am convinced, only serve to mislead us. From the preceding it must be clear that means of repression, if they are to prove of any avail, must be confined, not merely to animal contagion in cases of diseases indigenous to a country, but must also embrace, instead of evading, the question of the improvement of the surrounding conditions which favour primary contagion, with the atmosphere acting as its medium; as we should under such circumstances be no whit better off than if no measures of repression had been adopted in the first instance. It is only in the case of imported diseases where the medium of contagion is limited to the transference of germs from animal to animal, whether directly or through the agency of *fomites*, that these half-measures of repression could prove of any avail. But take the case of the disease in its chosen habitat, and where its seed is native, and the result of any precautions, without due care be taken to improve the

surroundings, will, so far as prevention is concerned, be absolutely *nil.* That this is practically true we are convinced by painful experience, acquainted as we must all be with the repeated failures that have attended this incomplete *modus operandi.* The bases of contagion are confined, then, not to cases of antecedent disease merely, but also belong to and are fostered by the very atmosphere we are continuously inhaling. When belonging to the former, a case of disease may be said to be the result of "secondary contagion," *i.e.*, contagion effected through the medium of an animal antecedently stricken; while in the other case it is the result of "primary contagion," *i.e.*, contagion being carried through the medium of the atmosphere. We can well understand, too, that when the surrounding atmosphere is surcharged with certain specific disease-producing bacteria, that all materials, fluid or solid, which are in communication therewith must also during these periods be liable to harbour these latter (germs), which are thus transferred into susceptible animal systems in the shape of food or water they are made to consume. Hence the necessity of keeping the surrounding media of our animals always under strict sanitary regulations, so as to prevent, by maintaining cleanliness, the excessive deposition of germs floating in variable numbers in the enveloping air, as cleanliness acts as a barrier to the development of all disease-germs, while dirt favours it.

In the case of indigenous disease the germs belong to the country, and all measures of prevention directed solely towards transference from animal to animal (*i.e.*, through the medium of an antecedently afflicted animal) must necessarily fall short of effecting much, for it leaves out of consideration the many scores of cases that become the primary recipients of the germs contained in the air they are made to breathe.

But we must not overlook the fact that a disease, though indigenous to the country—we will take the case, say, of Pleuro-pneumonia Specifica in the ox—when by sale, inadvertence, or otherwise transferred to one adjacent (*i.e.*, if one county of England send an infected animal to an adjacent county, which was free from its visitation heretofore, or if Ireland, England and Scotland, and America interchange with each other from

time to time, and take in a certain number of infected animals when itself free from it at the time), then the county or place just receiving the infection must adopt measures to check the spreading of the germs introduced, and this can here be only done by avoiding contagion from animal to animal, viz., by advising the slaughter of *all* animals imported which are in any way said to be possessed with that contagion.

TUBERCULAR STOMATITIS.

BY G. A. J. MUIR, F.R.C.V.S., GOVERNMENT V.S., WEXFORD.

WHETHER we agree with Mr. Macgillivray or not as to the proper designation of this disease, we are undoubtedly indebted to him for the excellent papers he has written on the subject; and that his nomenclature is more applicable than that of Diphtheritis, must be apparent to every one who is practically conversant with the disease. I think, with him, that it is essentially of a tubercular nature; but as to its contagiousness, I have not been able to satisfy myself that it is so.

I had an opportunity of paying particular attention to this alleged phase in its character during the month of May last, when a farmer called and informed me that he had a calf showing rather peculiar symptoms about the mouth. There was a profuse dribbling of saliva, the breath was very fœtid, and the animal was unable to eat. Suspecting the nature of the ailment, I gently pulled out the tongue, and on its lateral aspects, posteriorly, saw the characteristic "lumps"—that on the left side being largest, and having the appearance of an indolent ulcer, the mucous membrane and superficial muscular tissue between the "lumps" and along the raphe for about an inch having a pale bluish tint; it was friable and easily broken up (a gangrenous-like degeneration of the tissues), the cheeks, gums, and pharynx being intact. The calf having lost condition, I ordered an increased supply of milk, and dressed the affected parts with a solution of Chloride of Zinc.

The patient being in a small field, along with five other calves, convenient to my residence, I determined to watch the case narrowly, more especially with regard to its contagious character,

never having considered it as such until my attention was directed to it by Mr. Macgillivray's writings. As already noticed, there was a profuse discharge of saliva, which might have been easily, and doubtless was, picked up by the healthy ones; but throughout the time of treatment, and up to the present, all have remained perfectly healthy. I do not wish to convey that this is conclusive proof of its non-contagiousness, but it adds to the scepticism I entertain of its being so. A week after my first examination of the tongue I adopted more active measures of treatment, and dug out the yellow, cheesy-looking material, leaving a rough-edged, ulcerous-like wound, and following Mr. Macgillivray's example, dressed it with Cupri sulphatis. On my next visit, three days afterwards, I found the wound partly refilled with the same kind of material; but being more recently formed, there was less *débris*, and the tubercular-like appearance of the matter was more observable. This filling up of the wound, but less in quantity each time, continued for ten days or so, until recovery was established.

The whitish-yellow material which Mr. Campbell, in a recent communication, mentioned he had seen on the cheeks of a calf suffering from Muco-gastro-enteritis, seems to me to be analagous to that observed in young children, due to a parasitic fungus—the "Oidium Albicans." This looks like curdled milk, and consists principally of epithelium and fat, in which are embedded the sporules and filaments of the fungus. Mr. Campbell has very ably described the disease from which his patient was suffering, viz., Muco-gastro-enteritis, or "White Scour," but he is evidently mistaken in supposing that there is any connection between it and the so-called Tubercular Stomatitis.

ANTHRAX FEVER, OR LOODIANAH DISEASE, IN INDIA.

BY J. MILLS, M.R.C.V.S., A.V.D., INDIA.

(*Continued from p.* 114, *vol. xv.*)

Forage.—Science has taught us that the body cannot be built up, nourished, and sustained, without such food as shall supply it

with the nitrogenous elements of muscles, the carbonaceous elements of fat, and the various mineral matters which enter into the composition of bone, and furnish an essential element of the nervous tissue. Therefore we must select forage possessing these properties; and I may remark that nothing but the best quality should be given. All articles of food ought to be sound and genuine. They must be free from spontaneous changes of condition, such as fermentation, parasitic growth, or any of those obscure changes which the tissues of vegetables in some cases undergo at certain times. They should be also unadulterated.

With the exception of Southern India, where kulthée is given, gram (chenna*) is the usual food for troop-horses, except when barley is cheaper than chenna, when the former is gi ven, and *vice versâ*, depending, as it were, on their market value.

This chenna is grown largely throughout the whole country, and is as commonly used for feeding horses as oats are in England. Its composition, taken from Parkes, is, in 100 parts, without husk :—

Water...	11·39
Nitrogenous matters	22·70
Fat	3·76
Starch	63·18
Mineral matters	2·60

It has the appearance of irregularly-formed peas, and when sound is of a reddish-brown colour, with the husk firmly adherent, and with difficulty removed; but when the sample is a bad one, the husk is of various colours, and very dry and brittle. On closer examination, you will very likely find it infested with the weevil,† as if bad this insect is almost sure to be present.

The Government allowance of this gram per day is—"Walers," five seers (or ten pounds); stud-breds, four seers (eight pounds); which is ample, but if possible, always give it with bran, as it is of a somewhat heating nature.

* Chenna, or the gram dholl of India (*Cicer arietinum*). N. O. Leguminosæ.

† Weevil is an insect of the N. O. Coleoptera, of the family Circulionidæ. The corn-weevil (*Calendra granaria*) in its larva state is exceedingly destructive to grain. The female perfect insect lays a single egg in each grain, which when hatched turns into a grub, which eats away the interior of the grain and perfectly destroys it.

It is usually ground or split, and soaked before being given for a few hours. It can also be given without being split, soaked whole; but, of course, in that case it requires to be kept in the water for six or eight hours to thoroughly soften it. Some approve of allowing it to remain in soak until it begins to germinate, and I believe it is a very good way of preparing it.

Kulthée* is the usual feed on the Madras side of India. It is a species of small flat bean, and when of good quality it should be either of a light mottled grey, or very light brown colour. There is another kind which is perfectly black, but it is not unusual to see a mixture of all the three colours. The husk of this bean is extremely hard—so much so, that it cannot be given without first being boiled. It should just have sufficient water to cover it, and ought to be cooked slowly and thoroughly, ensuring the disintegration of the starch granules without hardening it and rendering it indigestible. When cooked, before removing it from the pan, it should be well steamed with the top off, so as to make it as dry and mealy as possible. If properly cooked, it will crumble like meal between the fingers. Before boiling it must be well washed, as it invariably contains a deal of sand and gravel. I find this sand, etc., averages a little over one per cent.; return it to the contractor and get its equivalent of kulthée in lieu. It is not so heating as gram, and is reputed to have a beneficial effect on the skin, and to improve the appearance of the coat.

The Government allowance of kulthée per horse per diem is—"Waters," five seers (ten pounds); country-breds, four seers (eight pounds).

Bran.—Nothing but the very best quality of bran should be given, as it forms such a convenient vehicle for the conveyance of filth in general, and especially sand; and I firmly believe that there is more sand conveyed into a horse's stomach by one feed of bad bran than in fifty feeds of gram or kulthée.

* Kulthée. Dolichos (a bean), "wall" or "Ghot-wall" of India. Its composition, after Forbes Watson, in 100 parts without husk, is as follows:—

Water	12·03
Nitrogenous substances	23·27
Fat	2·20
Starch...	59·38
Mineral matters	3·19

A good test for the presence of sand is to fill a large measure glass with clean water, then place a handful of bran on the surface, and tap the edge of the glass with the tip of the finger, and if sand is present it will fall to the bottom. The above test is good enough for all practical purposes, and will be found most useful in making a hurried inspection.

If sand is present, reject the bran at once, and rather let the horses go without it than give it them, as there is more harm done through the giving of dirty bran than we have the remotest idea of.

It is most difficult to procure sometimes in India of the desired quality, unless you are near to some Government bakery, and that is not always the case. In the rainy season it is very hard to keep for any time, owing to the humid state of the air, which very soon renders it "sour," when it is then utterly useless.

When procurable in sufficient quantity, the troop-horse ought to have at least one seer (two pounds) daily (especially if his staple feed is chenna) in conjunction with his other ration of grain, as it prevents constipation, and in that way acts beneficially on the system.

Grass.—Dūb, or dhoob,* is said to furnish no less than three-fourths of the food of horses and cattle in India. In a great many parts of the country during the hot season this grass is most difficult to get, being completely dried up with the heat of the sun ; but this I am sure could be remedied to a certain extent, if during the season of the year when it is plentiful a large supply was brought in by the grass-cutters, made into hay and properly stacked. This dūb hay, if "well-got," is eaten by the horses with considerable relish, and acts as a very good substitute for the green grass.

Before it is given, the grass ought to be well shaken up and

* Dūb, Bengal ; Hurry-alee, Madras. (*Cynodon dactylon*, Royle ; *Agrostis linearis*, Keon.) There are generally considered to be three kinds of dūb. The best, which throws out the creeper-like stem, is called Paundā. This is essentially the same as the florin grass of the English farmers. The second, which is smaller, grows on hard ground, and is called khūtya dūb. The third is called the sufēd, or white dūb, from its peculiar colour, and is used by native practitioners as a medicine in fevers.

beaten, so as to clean it and remove the earth from the roots. Never allow the grass-cutters to wash it under any pretence whatever, as it is sure to be done in dirty water, and after such treatment it rapidly becomes sour and "heats." It should also be well-picked, and everything mixed with it removed, and nothing but the pure dūb accepted.

Strict inquiry ought always to be made as to where the grass has been cut, as if taken from the bottom of drains, or in the vicinity of decomposing animal or vegetable matter, it is liable to convey disease. Therefore the ground ought always to be selected by a competent person.

Every regiment and battery in India should have its own "rukh" (grass land), carefully selected and properly kept clean; and if this rukh was well manured with the litter from the stables, there is little doubt that good grass would be obtained.

Large quantities of dūb, if good, can be consumed by a horse in a day, but the regulation allowance of twenty seers (forty pounds) is quite sufficient to keep him in good condition.

There is another kind of grass, called "rumnah," which is very like our English rye-grass, but stands taller and stronger. It grows in some parts of Southern India to great perfection, and makes sweet and nutritious food, and can be made into capital hay.

The allowance of this grass is fifteen seers (thirty pounds), as it is much lighter and drier than dūb.

Salt.—The benefits of a regular and sufficient supply of salt are incalculable. It forms an essential constituent of the blood; the loss of saline particles therefrom by the secretions being repaired by the giving of this mineral, and in that way it keeps the body in health.

Horses are more or less fond of it, as shown by the manner in which they will lick a piece of rock salt if kept near them. As it is not practicable to keep pieces of rock salt near to troop-horses, owing to the "chronic kleptomania" from which the syces suffer, the only thing to be done is to mix it with the gram ration. Each horse ought to have at least two drams of salt daily, and always make it a rule that there is never any harm in giving too much, but very great harm in giving too little.

Water.—Water, like air, to be wholesome must be free from the presence of impurities. This is a well-known fact; and it must also be sufficient in quantity, without which it is impossible to preserve health. The noxious ingredients most to be dreaded in impure water are animal organic matter, especially of fæcal origin, and vegetable organic matter and some salts. The diseases such water is liable to produce are many and varied. There are numerous tests for the detection of the impurities contained in water, and I may remark that whenever they are suspected, lose no time in having it thoroughly examined by some one who makes it a special study.

As regards the presence of bacteria in water, Burdon Sanderson says that—"The germs (if the term may be allowed) of bacteria may exist in water, and be indetectable by the highest microscopic powers, or even by Tyndall's test by the electric beam. The present view is, that while it has not been conclusively shown that bacteria or vibriones are in themselves hurtful (though they are held by some observers to be so), their presence indicates the co-existence of certain organic substances and putrefaction, and putrefactive substances in water are certainly dangerous."

The presence of bacteria in water is of the utmost importance to us, as this Loodianah Disease, or Anthrax Fever, is supposed to be due to their presence in the blood, and to reach the blood they must be either taken in through the medium of the drinking-water, the food, or the air; but Burdon Sanderson's experiments are not favourable to the theory of the introduction of bacteria from the air. However, it is a subject well worthy of every investigation.

Just let us look at the importance which the Arab of the Sahara attaches to pure water for his steed.

"They are very careful and particular in their choice of food, and above all of the water they give to their horses. Many a time during the early days of the conquest, while on an expedition, after long marches in an intolerable heat, with a south-west wind blowing that choked us, and drove the dust and sand into our faces, when horse and foot alike panting, exhausted, without power of motion, we delivered ourselves up, worn out as

we were, to a fatiguing sleep, often interrupted by the alerts caused by the enemy prowling around us—at such a time I have seen the natives go a league from the bivouac in order to water their horses at some pure spring known to themselves. They prefer to risk their own lives to experiencing the pain of watering their horses at the scanty rivulets in the encampment, quickly converted into filthy drains by the trampling of men and beasts of burden."*

The water supply, according to circumstances, may be from wells, shallow or deep, springs, rivers, or collected rain-water in pools. Under ordinary circumstances, and when the troop-horse is at a station, as a rule, good well-water is procurable, and should always be used in preference to river or collected water, or even springs, as impurities reach them from a variety of sources.

A covered well is always preferable to an open one, as, to a considerable extent, impurities are prevented from gaining access to the water from above, and in that way it may be kept comparatively pure.

On horses marching into a new station, the wells may have been disused for some time, and in that way the water may have become bad. Therefore make inquiries and ascertain the fact. If such has been the case, it is always safer to have the wells emptied and thoroughly cleaned out before being used.

The surroundings of the well ought always to be looked into, and everything of an objectionable nature removed, and the ground in the vicinity kept scrupulously clean.

If the horses are watered from a trough or buckets, they should be thoroughly cleaned daily.

The amount of water an animal drinks depends entirely on the state of the system at the time, the temperature, and the description of food it has been receiving.

There is no rule that can be laid down as to the actual quantity of water to be given. Simply under ordinary circumstances allow the animal to drink as much as it pleases; but if a horse has been without water for a long period, let the supply be limited at first, and gradually increased until the state of the system will allow of it being drunk *ad libitum*.

* "The Horses of the Sahara." By E. Daumas.

In temperate climates three times a day is often enough to give water, but in India a horse ought to be offered water not less than four times daily. Once before each feed, and again about nine p.m. A great many people are in favour of watering only three times, but I have seen horses drink greedily in the evening, more especially during the hot season ; but, of course, during the winter months (cold season), when the atmosphere may be called temperate, three times may be quite enough.

Bedding.—A good straw bed is just as essential an agent in maintaining health as good food, and what is more trying to the system than a want of proper rest ? and what is more distressing than a hard bed ?

If at all procurable, at least six pounds daily of straw should be allowed. In the morning it must be removed, the litter well shaken out of it, and put in the sun to dry until required again in the evening. Paddy (rice) straw makes the best bed.

Feeding.—Animals such as the horse should have a good meal three times daily, with little or nothing between, as by doing so we arrest the process of digestion of the food already in the stomach.

About two hours after a meal, the contents of the stomach are in a state of fermentative change ; if then more food is added, this passes out, the whole process has to be gone over again, thus not only weakening the stomach, but rendering its contents unfit for the purpose of nutrition. Good blood depends upon good and proper nutrition, and proper nutrition depends upon perfect digestion ; so let this be borne in mind in feeding the horse.

The three daily feeds of grain must be given at regular intervals, but never let the interval be too long, as it makes the animal's appetite ravenous, and the feed, when given, will simply be "bolted" instead of being slowly and properly masticated.

The bruising or crushing of grain must be considered as a matter of the greatest importance, and is the means of saving a considerable quantity of it. And another circumstance to be taken into consideration regarding crushing is, that if grain be given whole it causes a great deal of useless and extra exertion of the stomach in endeavouring to digest it. This exertion is very injurious, gradually weakening that important organ, and

laying the foundation for many diseases. Whereas, if properly crushed, and not given in excess, but duly proportioned to the horse's work, it will be perfectly masticated, digested, and assimilated.

If either iron or proper brick mangers cannot be got, the only thing to be done is to use a nose-bag for feeding out of. The one in general use is made of leather, and would answer the purpose very well, were it not that from being frequently washed and put in the sun to dry, it becomes perceptibly smaller and harder the longer it is in use—so much so, that it is quite common to see horses with wounds on the jaw from the friction against the edge of the bag during the act of mastication.

It ought to be rigidly enforced that each nose-bag have the troop or battery number of the horse on it that uses it, as one animal might be suffering from a highly contagious disease undetected, and its nose-bag would be almost certain to be put on another horse, and thus spread the disease—in fact, unless they are properly numbered in large bold figures, I see nothing to prevent them becoming mixed up.

Grooming.—In a tropical climate, the excretion by the skin is greater than in a temperate one ; therefore, such being the case, every attention must be paid to its cleanliness, so that the free discharge of the products of perspiration may not be interfered with.

The sympathy or consent that exists between the skin and the internal organs of the body is a striking circumstance, but still a true one, and is being daily demonstrated to us. As an illustration of this fact, take the stomach. Let a horse under certain circumstances drink cold water, and watch the effect on the skin —the animal will break out in what is termed a "cold sweat."

Then, again, if a horse comes in heated after a journey, and is exposed to a cold wind or rain, the consequence will very likely be inflammation of some of the internal organs. Many other circumstances might be brought forward to show the intimate connection between the internal organs and the skin, but the above demonstrates how necessary a healthy state of the skin is, and good grooming, in combination with good food, etc., is the only means by which it can be kept healthy.

Grooming serves two great purposes: it removes from the surface

of the skin the scurf or worn-out cells, the unevaporated effete material given off from the system, and foreign bodies deposited by the wind; and the healthy friction of the brush imparts a tonic effect to the whole frame.

If a horse is not properly groomed, or not groomed at all, he soon loses condition, his health becomes impaired, and actual disease of the skin itself may result.

A glossy coat—which every one loves to see—is not only due to the clean state of the hairs themselves, but also to the increased secretion the sebaceous glands throw out, consequent on being so thoroughly stimulated in the act of grooming.

Those parts of the body such as the nostrils, ears, and dock, ought to be sponged out twice a day. And the sheath and penis ought to be kept scrupulously clean by being frequently washed out with soap and water.

In the hot season the washing of the body is most refreshing, and no doubt imparts considerable tone to the system, and in that way is beneficial; but unless everything is at hand to dry the animal thoroughly after washing, do not attempt it.

Clothing.—Health depends in no small degree upon good clothing, provided it be judiciously applied. Of course, during the hot season it is not much needed except when horses are in camp. On such occasions, when the sun is hot, the "jhool," or blanket, folded double and laid along the spine, will be found a capital protection from its injurious effects.

During the cold season it must be used as required, but always with discretion, as there is no greater factor in the production of disease than an animal perspiring profusely under the load of a heavy blanket, or in standing shivering without one.

(*To be continued.*)

EMBOLISM.

BY M. J. TREACY, M.R.C.V.S., INDIANAPOLIS, INDIANA, U.S.A.

IN answer to a telegraphic summons on June 5th, I proceeded about one hundred miles south of this city, and on my arrival, found my services were sought relative to a handsome black

(six years old) steed, with the following history:—Intermittent lameness for six months; had been treated by empirics without any beneficial results. I found him standing in his box, looking the picture of health; pulse, temperature, etc., normal; had him walked, paced, and turned; still showed no lameness. Hitched him to a sulkly, and had not paced him two hundred yards, when he exhibited stiffness of both hind limbs, and after proceeding a short distance, he was unable to move a step further. His distress was very great, breathing and respiration much hurried, and back arched; the perspiration from his loins, *forward, literally poured off him in showers, but from that region backwards the body and limbs were deadly cold and clammy.* With much difficulty (after some rest) we got him back to his stable, when on rectal examination I discovered the great aorta and right and left external and internal iliac arteries to be almost plugged up; so much so that, judging from their pulsations, the greatest calibre could not exceed that of a crow-quill. The pulsations in front of the Embolism were strong and powerful, while in the diseased parts they could scarcely be felt, and manipulation easily detected their channels to be almost filled with a gummy material, yielding to the finger touch, and of an elastic nature.

Treatment nil; advised the owner to destroy him, or in case he did not do so, put him under a course of Potass. iodide. Unfortunately this animal was sold by auction, and I lost sight of him.

Editorial.

THE ARMY VETERINARY DEPARTMENT IN EGYPT.

THE despatch of an Army Corps to Egypt from this country, and another from India, to suppress rebellion in the land of the Pharaohs, has attracted a large amount of attention, from a military and political point of view, and should also excite a lively interest among medical men and veterinarians. The resources of the Army Veterinary Department have been rather severely taxed, as twenty-five of its members had to be sent off with the expedition, some at very brief notice indeed, and about six thousand horses had to be embarked from England in ships specially fitted up for them. Depots will be formed at Malta and Cyprus, but the main portion of the animals will be in Egypt, the total number probably exceeding eight thousand at the commencement of operations.

Everything that experience or forethought could devise has been adopted, in order to convey these animals to their destination in safety, and to maintain them in health and efficiency after arrival; and so far with great success. But the climate of Egypt has to be considered as a serious factor, in addition to the other influences which are always more or less in operation in the production of disease and inefficiency during a campaign. Of the influence of the climate of Egypt on the health of animals, we unfortunately have not much evidence of either a negative or positive kind. That country has always had an evil reputation—particularly Lower Egypt—since the time of the seven plagues, and apparently not without reason; for mankind and animals appear to have been decimated at different times by outbreaks of the most fatal and destructive diseases, while other almost special, and certainly very injurious maladies, are never absent from it. For instance, there are the fevers, diarrhœa, dysentery, and other disorders usually prevalent at certain seasons in countries situated in that geographical position, and possessing the physical characteristics of Egypt; and besides these, there is the contagious Ophthalmia, and perhaps the still more serious parasitic diseases produced by the trematode worm, the *Distomum* or *Bilharzia hæmatobum*, which inhabits the bloodvessels, and lives on the blood corpuscles, giving rise to hæmaturia and other serious symptoms; and the mematode worm—the *Ancylostomum duodenale*—which infests the upper part of the small intestine, burrowing into the mucous membrane, and giving rise to a very intractable form of anæmia from which a large proportion of the native Egyptians suffer, and which Greisinger has designated "Egyptian Chlorosis."

The geographical position and physical configuration of Lower Egypt have contributed much to render it insalubrious. It is annually exposed to far-spreading inundations by the overflow of the Nile, and the retiring waters leave behind them a reeking morass, which, owing to the nature of the deposit of mud left by the floods, together with the large amount of moisture and the hot sun shedding its rays direct upon it, shortly after becomes a beautiful green plain, covered with the rankest and most luxuriant vegetation, and pools of stagnant corrupted water. Then quickly succeeds a period when it is an arid desert, deeply laid with dust and hot sand, and endowed with nothing that can tend to the welfare of animal life. We need scarcely wonder, then, that particular diseases should be more than usually common, and while such a country must present many obstacles of a formidable nature to the operations of an army—and especially to the movements of cavalry and wheel transport—it must also prove a source of considerable anxiety to veterinary officers engaged in the expedition.

An able writer, Wilson, who described our first campaign in Egypt in 1801, states:—"Lower Egypt is only practicable for military operations six or seven months in the year (from the latter end of February until the middle of August). The inundation is completed at the beginning of September; and not before the month of December can any individual, well acquainted with the passes, traverse the country, for there are no bridges or regular roads. Troops with artillery will not then attempt

their movements, as the water in the canals is too low to admit of boats being used, and the mud is too deep to wade through. Sometimes a passage is not open before the beginning of March. The many high banks of the canals, the deep fissures in the earth, surrounding every square foot, caused by the sun cracking the dried mud forming its soil, do not afford a surface for cavalry. Although the horses there seldom pass out of a foot's pace, except for the gallop of a few hundred yards, most of them are foundered, and none, if pressed in a trot for ten miles would be able, from want of wind and stamina, to proceed."

The experience then gained does not lend us much assistance. During the army operations in Egypt in 1801, the force of cavalry (consisting of a detachment of the 11th Dragoons, now Hussars, 12th Dragoons, now Lancers, 26th Dragoons, and a detachment of Hompesch's cavalry regiment) and number of animals employed were comparatively insignificant, and there do not appear to have been any veterinary surgeons with the expedition. So that there is no veterinary medical record remaining to inform us as to the losses and diseases among the horses and other animals then employed.

But that Lower Egypt is insalubrious to animals we have modern evidence to show. The horses there are deficient in stamina and speed, cattle and poultry do not thrive, and the buffalo is perhaps the only one of the larger domesticated animals that is adapted to the climate. Cattle Plague, when introduced into the country, appears to be most destructive, and carries off nearly all the ruminants; at certain periods the ravages wrought by the *Distomum hepaticum*, or liver fluke, are quite appalling, horses, cattle, buffaloes, sheep, and goats, falling victims to it, and the Bilharzia has been found in the bloodvessels of cattle; while horses are liable to a peculiar epizoötic fever of a very fatal character—a widespread outbreak of which is recorded in an early volume of this Journal.

Some years ago, during the government of Mehemet Ali, a veterinary school was established at Abouzabel, and M. Hamont, its director, alluding to the diseases of animals, writes: The breed of cattle in Egypt is generally weak in constitution and neglected. Epizoötic diseases frequently effect the most dreadful ravages among them; sometimes they devastate the country to such a degree, that men are harnessed to the plough and the cart, in order that the land may be, although imperfectly, cultivated, and some assistance obtained. Horses suffer much from Farcy, and softening of the liver is a primary and essential malady, very widespread among army and country horses, more common in summer than in winter, and attacking by preference the fattest and those of adult age. It is a very redoubtable disease, and kills many horses. Intestinal hæmorrhages are also very frequent and most fatal to horses. These animals, and also cattle, sheep, and camels, suffer from a deadly Dysentery. Indeed, Dysentery is very common in summer among troop and other horses, attacking those which live in the open air, as well as those which inhabit low and badly-ventilated stables. In regiments there sometimes breaks out, during the months of July and August, an acute form of Dysentery which kills the horses in a few hours. The mud,

earth, and sand which the water of the Nile contains, and which these animals drink, is the cause of this Dysentery; these matters are found in the intestines. The great crowding of animals, the intense heat, and too dry and unvaried food, are also determining causes. The Dysentery of cattle is especially widespread, attacking the oxen in the villages and towns, and all over the country, as well as the government herds. It is a murderous disease, destroying life with great rapidity. The Dysentery of camels is sometimes acute, sometimes chronic, and kills a very great number; when it is acute its course is very rapid. At Cairo, the camels are lodged in great enclosures open on nearly every side. There they pass their days and nights in the cold season, after a very hot summer, and in this state, of course, they must experience the troublesome effects of the sudden diminutions of temperature which take place. One of the forms of Anthrax which is enzoötic and epizoötic in Egypt, appears to be very destructive among cattle, in the form of gangrenous sore-throat. The disease reigns over the whole country in winter and summer, spring-time and autumn. It is contagious, and carries off the animals in two, four, and six hours. It has its seat in the throat; a tumour appears there, quickly increases in size and extent, and at last causes death. The expired air and the saliva communicate the disease from sick to healthy, as experiments have proved.

Splenic Apoplexy—another manifestation of Anthrax—is also very frequent among ruminants, and malignant pustule is seen in the horse in the months of May and June, during the prevalence of the very hot kamesine wind.

How the climate may affect the horses sent from this country, will much depend upon their lengthened exposure to it, the vicissitudes they may have to encounter, and other circumstances. But, as before remarked, nothing has been omitted in the preparations for contingencies such as are likely to arise in Egypt, while the very large and experienced body of veterinary officers—the majority of whom have already seen active service in South Africa and Afghanistan—under the able direction of Inspecting Veterinary Surgeon Meyrick, should ensure close and careful supervision over the sanitary condition of the animals, and skilful medical and surgical attention when required. At any rate, the arrangements made contrast most strikingly with those devised for the Crimean War, and mark an immense advance in the Army Veterinary Department during the years that have passed since 1854.

PROTECTIVE INOCULATION FOR SPLENIC APOPLEXY.

In the *Journal de Médecine Vétérinaire et de Zootechnie* for July, under the heading "Experimental Study of the Conditions which will permit the Employment of Toussaint's Method of attenuating the Anthrax Virus, and Vaccinating Animals liable to Splenic Apoplexy," Professor Chauveau, Director of the Lyons Veterinary School, has a note on this important subject. In being the first to indicate a procedure of vaccination against Splenic Apoplexy, he remarks, M. Toussaint has rendered a signal service to science and agriculture for which he has not obtained sufficient credit, because

public attention has been diverted from his discovery by the great and legitimate applause which attended the researches by which M. Pasteur was soon afterwards able, by artificial cultivation, to attenuate Anthrax Virus, and cause it to reproduce itself indefinitely, with its more or less benignant properties. But, on the other hand, the inventor of the first Anthrax vaccine,* for the present condemned to inaction through disease, has not been able to give to his discovery its full development. It appeared to the late teacher of Toussaint (Chauveau himself) that it was his duty, pending the complete restoration to health of his pupil, to show to the public, by new experimental researches, the importance of this discovery. It is known that Toussaint vaccinated sheep to protect them from Splenic Apoplexy, by inoculating them with Anthrax blood which had been heated to a certain temperature for a few minutes. It is also known, through the demonstration given by Pasteur, that the elevation of temperature acts by attenuating the activity of the virus—the Anthrax bacteria. This curious modification, brought about almost instantaneously in the virulence of these bacteria, does it differ essentially in its nature from the attenuated virulence of the bacteria which are developed and multiplied at the relatively high temperature of 107·6° to 109·4° Fahr.? In every case it is supposed to be much less certain, but I purpose demonstrating that this is an error. When employed according to certain rules which I shall presently mention, the heating, for a very brief time, of blood infected with bacteria transforms that fluid into a vaccine as certain in effect as that of Pasteur.

The first and principal rule to follow, is to heat the blood in such a way as to at once raise it, throughout its mass, to the desired temperature, and to remove it as promptly from this influence. When the quantity of blood which it is desired to modify is too large, every part of it is not uniformly acted upon by a very brief heating; the virulent agents in the deeper layers preserve all their activity and aptitude to cause mortal infection; and when the heating is too prolonged, there is the probability that the greater portion of the virulent agents may be absolutely killed. To avert this danger, the blood should be put into small cylindrical pipettes not more than one millimetre in diameter (0·039 inch). The extremity of these pipettes is sealed, and the portion containing the blood is then plunged into a large quantity of water heated to, and maintained at, the desired temperature. After a certain time has elapsed, the pipettes are withdrawn and plunged into cold water. Owing to the small mass of the vehicle containing the virulent agents, these are all heated and cooled together, with a precision which leaves nothing to be desired.

Another rule should be rigorously observed, if the success of the operation is to be fully realised. It is necessary that the blood be collected under conditions which ensure that all the virulent agents introduced into the tubes have the same vitality and activity, and that they will be influenced in the same way by heating. This is the case when the blood is obtained from a guinea-pig that has died thirty-six to forty-eight hours after inoculation with a very active virus. Before putting the blood in the pipettes, it should be allowed to clot; this clot is then broken up and squeezed, in order to obtain defibrinated blood, which is always very rich in virulent rods.

In an hour, from only one guinea-pig, it is easy to prepare sufficient vaccine to inoculate more than five hundred sheep. The inoculation is made with the point of a lancet, charged in the manner practised in my laboratory, with a very small quantity of virus. Two or three large subcutaneous punctures made on the inner side of the ear are sufficient for an active inoculation.

* This is a very misleading and improper term for the modified Anthrax Virus.

The vaccine thus prepared should be used at once, or the day after its preparation at the latest. Experience has assured me that it is then as inoffensive and efficacious as Pasteur's vaccine, *provided the heating has been practised at the proper temperature and for the necessary time.* This is the point which has the greatest interest for me at present. Between the degree of heating which almost entirely deprives the blood of its activity, and that which leaves it all its virulence, it is generally admitted there is only one intermediate stage, which corresponds to a degree of attenuation more or less difficult to obtain. This is a mistake. My investigations lead me to believe that the margin comprised between these extreme points is so wide, that by more or less heating several degrees of attenuation may be obtained. Nothing can be more easy than to produce in this way, and in a few minutes, five or six vaccinating viruses having an almost regularly graduated activity. So far as varying the activity of the vaccine-virus is concerned, this method is simplicity itself. The following are a few indications as to its employment and results.

It is in starting from a temperature of 109·4° to 111·2°, which is sufficient to prevent the development and multiplication of the *Bacillus anthracis*, that the heating of Anthrax blood intended for vaccination material may be submitted. The operation is always successful at a temperature of 127·4° to 129·2°, and it has always most likelihood of success if this limit is not exceeded.

Naturally, the duration of heating should be in inverse proportion to the elevation of temperature and, given a certain temperature, directly proportionate to the degree of attenuation sought to be obtained. For the time being, I shall put to one side the experiments I have made with temperatures lower than 122°; it will suffice, for the moment, to indicate the results produced by heating at a temperature of 129·2°, 125·6°, and 122°. From nine to ten minutes' exposure to a temperature of 129·2° is sufficient to completely kill the bacteria of Anthrax blood. This time is too short to perfectly ensure the attenuation of the virus; and, besides, heating to 129·2° is to be avoided, although I have obtained Anthrax vaccine in heating virulent blood at this temperature for eight, seven, six, and five minutes. At 125·6°, on the contrary, we may operate with almost complete certainty; and it then requires a heating for fifteen to sixteen minutes to destroy all vitality in the virus. When heated for fourteen minutes, the virulent activity is still present, but extremely attenuated, and this attenuation is gradually less marked when the period of heating is diminished to twelve, ten, eight, and six minutes. It is the heating at a temperature of 122°—that resorted to by Toussaint—that I have studied with the greatest care. At this temperature it requires about twenty minutes to kill the Anthrax bacteridia. Heating for eighteen minutes produces an excellent vaccine, very much attenuated; and the attenuation is still marked after heating for ten minutes, though it is not sufficient to render the primary inoculations absolutely inoffensive; if the heating is reduced to eight minutes the risk is increased. Between these two extreme degrees of attenuation are naturally a certain number of gradually increasing intermediate degrees, varying with the heating interval of from ten to eighteen minutes. A first inoculation with weak vaccine (blood heated for fifteen minutes at a temperature of 122°) protects sheep subsequently inoculated with the most active virus.

It is not only by the result of inoculations that a judgment may be formed as to the degree of attenuation that heating for a more or less brief period communicates to the activity of Anthrax virus. The diminution in virulence always coincides with an equivalent decrease in activity of proliferation of the microphyte; and the recognition of this decrease constitutes a very interesting and elegant means of proving that the attenuating influence

of heating varies with its duration. Thus, if ten small quantities of mutton broth are contained in as many small cultivating vessels, and each is inoculated with a drop of the same Anthrax blood, not heated, or heated at a temperature of 125·6° for eight, nine, ten, eleven, twelve, thirteen, fourteen, fifteen, or sixteen minutes, when placed in a stove at a temperature of 100·4°, cultivation does not proceed in the same manner in all of them. If carefully observed at short intervals, it will be noted that the process of proliferation begins to appear in the fluid containing the non-heated blood; then in those in which is the blood that has been heated for eight, nine, and ten minutes—the process being more delayed in those in which the blood has been heated for eleven and twelve minutes. In about twenty-four hours the process has scarcely commenced in the fluid inoculated with blood exposed to the elevated temperature for thirteen minutes; and it is not until forty-eight hours have elapsed that the first traces of proliferation are noticed in that which has been heated for fourteen minutes. In that which has been heated for fifteen minutes the development of mycelium is very problematical, and in that exposed to heat for sixteen minutes it is impossible.

These new facts give a real value to Toussaint's discovery; and though I refrain from comparing it, so far as its scientific importance is concerned, with the marvellous creation of races of vaccine-virus due to M. Pasteur, yet I think, with regard to practical utility, the two methods of vaccination may equally share in public favour for the services they render to agriculture.

THE PROTECTION OF UNINFECTED COUNTRIES FROM RABIES.

THERE are at present certain parts of the world into which Rabies has not been introduced, notwithstanding the fact that the canine population therein has been, to a large extent, imported from countries where this serious and alarming disease is always more or less prevalent; and this exemption of some at least of these favoured regions, must be attributed entirely to the happy accident that no infected dogs have been among the arrivals from the dangerous sources. Their exemption is certainly a very strong argument in favour of the non-spontaneous generation or development of the disease, as in these countries dogs are exposed to all the external influences which are supposed to produce Rabies, and yet it is unknown.

But it would appear that the greater and more frequent prevalence of the scourge in Europe and America, and even in India, as well as a better knowledge of contagious diseases, is rousing the apprehensions of the exempted countries to the grave danger they are exposed to, by allowing the unrestricted admission of dogs at their ports, and the necessity for protecting themselves against the invasion of a disorder that is, perhaps, of all maladies the most terrifying, and at the same time the most destructive of that affection and companionship man entertains for the dog.

Australia and New Zealand are two of the countries to which Rabies and Hydrophobia are unknown, and New South Wales has taken the lead in this matter, by seeking to obtain information as to the course to be pursued in maintaining that and the adjoining colonies free from the disease. The following correspondence may therefore prove of interest, as showing the immunity enjoyed by these countries, a point of historical and pathological importance, and also as evidence of the enlightened views entertained by Sir Henry Parkes, the Premier of New South Wales, as to the necessity for adopting active police measures.

Colonial Secretary's Office,
Sydney, New South Wales.
1st December, 1881.

SIR,—The Chief Inspector of Stock having drawn attention to the risk incurred by the unrestricted introduction of dogs into this and the neighbouring colonies, from countries where the disease of Hydrophobia exists, I have the honour, at the instance of the Minister for Mines, to request that you will be so good as to obtain the opinion of Dr. Burdon Sanderson and Mr. Fleming, M.R.C.V.S., on the subject, for the guidance of this Government.

I have the honour to be, etc.,
(Signed) HENRY PARKES.

The Agent General for New South Wales.

5, Westminster Chambers, Victoria Street, S.W.
6th February, 1882.

SIR,—I have the honour to forward herein, for your information, a copy of a despatch that I have received from my Government, requesting me to obtain from you an opinion upon the unrestricted introduction of dogs into the colony of New South Wales, from countries where Hydrophobia exists. Will you, therefore, be so good as to favour me with your opinion at your early convenience?

I have the honour to be, etc.,
S. SAMUEL, Agent General for New South Wales.

G. Fleming, Esq.,
Royal College of Veterinary Surgeons.

London, February 14th, 1882.

SIR,—I beg to acknowledge the receipt of your communication of the 6th inst., requesting my opinion as to the risk incurred by the unrestricted introduction of dogs into New South Wales and neighbouring colonies, from countries in which Rabies or Hydrophobia prevails.

In view of the fact that this malady is apparently on the increase in all the countries in which it is now present; that certain regions—as Australasia and New Zealand—are still exempt; and that it is a purely contagious disorder, *i.e.*, does not arise spontaneously, but owes its existence and dissemination solely to its contagious properties; it must be evident that its advent in countries yet free from it is merely a matter of course, a question of time, unless steps are taken to prevent its introduction by very stringent measures.

That Rabies can be so excluded is an undoubted fact. For instance, in the Indian Ocean we have the island of Mauritius, a British possession, into which the disease was imported in 1813, and into which the admission of European or other dogs has never been interdicted or controlled in any way. There Rabies is as prevalent as in England or on the Continent of Europe.

Not far from this island is the French island of Reunion, almost identical with the Mauritius, so far as geology, climate, flora and fauna are concerned, and not different in any important respect with regard to the breed of dogs.

Yet in Reunion Rabies is absolutely unknown, and I cannot discover that a case of the disease has ever been witnessed there. This immunity is due to the fact that the importation of dogs is rigorously prohibited.

In order to maintain New South Wales and other uninfected colonies free from the dreadful scourge, two courses are open. Either impose a

quarantine on imported dogs, or entirely prohibit importation or landing of dogs from infected countries.

But quarantine, to be effective, must be very strict; and as the period of incubation or latency of Rabies is extremely indefinite—ranging from a few weeks to more than a year—quarantine should therefore be sufficiently long to cover the maximum term of latency.

Seeing the difficulty, expense, and even danger to be apprehended from quarantine (as from dogs escaping), I would strongly advise recourse to rigid prohibition, unless really effective quarantine can be guaranteed.

In the imposition of quarantine or prohibitive measures, no exceptions should be made as to breed, class, or value of dogs, as all dogs in infected countries are exposed to infection, and must therefore be looked upon with suspicion as a source of danger.

I have the honour to be, etc.,
GEORGE FLEMING, F.R.C.V.S.

Sir S. Samuel, C.M.G.

RECOVERIES FROM RABIES AND HYDROPHOBIA.

AT a recent meeting of the Paris Academy of Medicine, a memorandum was read by our colleague M. Decroix, Hon. Associate, R.C.V.S., reporting nine cases of recovery from this disease.

In the first case, Dr. Menecier had inoculated, with the saliva of a mad dog, two other dogs and a rabbit. The three latter died of Rabies, while the former, which had supplied the virus, recovered.

Among the experiments on Rabies which M. Decroix had made, one of them was the inoculation of a dog with the saliva of a mad dog. The latter died while the former became first mad and then recovered. M. Decroix had also inoculated, with saliva taken from a man some hours before he died mad, a dog, which became mad, but ultimately recovered.

The fourth case was one in which M. Rey, formerly Director of the Veterinary School at Lyons, received into the hospital a dog bitten by another mad dog. It became rabid, but finally recovered.

M. Laquerrière, military veterinary surgeon, also reported a case of a dog which, when bitten by a mad dog, became affected with the malady, and was ordered to be destroyed; but the proprietor did not wish to lose the animal, and it recovered without any treatment.

In the sixth case, Dr. Lunel had treated a reaper who went mad after being bitten by a rabid dog, and he recovered; while a dog bitten at the same time, by the same animal died.

In the seventh case, Dr. Nichols, at a time when both men and animals were going mad in the same locality, was called to attend an Englishman who showed symptoms of Hydrophobia. He recovered in a few days, although he had been bitten by a dog twenty-one days before, which had not been found up to that date.

In the eighth case a mad dog bit two men, a cow, and a dog. They all died except one of the men, who recovered.

Lastly, M. Decroix reported that he had seen a horse which showed symptoms of madness. It recovered in eight or ten days, as did men and other animals similarly affected.

In Rabies the fits commence and increase in frequency and intensity during the first two or three days; are at their height for two or three days, and disappear in the same period of time if death has not taken place about the fifth or sixth day. The scientific men who have not seen cases which have been cured are very wrong in disregarding the cases reported by those who

have seen them recover, and in publishing only unsuccessful cases, or those where there has been an error in the diagnosis, thereby forming erroneous ideas in the public mind.

The Committee on Rabies made, during the year 1874, a series of experiments with medicines said to be useful for curing Rabies, in which they made use of pilocarpin three times, and in every case the remedies hastened death by the violent fits they brought on.

In the course of his experience, M. Decroix met with two cases of Rabies which did not end fatally.

The conclusions arrived at by our colleague are as follows:—

1. It has been experimentally demonstrated that cases of Rabies may recover spontaneously.

2. Up to the present no treatment has been proved to be anti-rabic, and cases of cure by this or that means may be attributed to the efforts of nature.

3. All the means used by the Committee since 1874, comprising principally injections of azotate of pilocarpin, have hastened rather than retarded the death of the subject.

4. Those dogs usually recovered which were left without treatment, as the medicines brought on violent fits, and there is an inclination among medical men to leave men thus attacked in perfect quiet, and only practise experiments on animals. The filing down of dogs' teeth—an easy and almost painless operation—is still the most efficacious preventive of rabific inoculation.

5. Rabid people left in the dark and kept quiet are not subject to fits, unless they are brought on by excitement or ordinary medicines; and "as far as I am concerned," says M. Decroix, "I would rather be attacked by this kind of madness, than many other diseases, particularly the rodent chancre of smokers."

CRUELTY TO ANIMALS.

THE following letter from the President of the North of England Veterinary Medical Association deserves careful attention. We have no sympathy with those who would cruelly ill-treat any dumb animal, but before a defendant is convicted the charge ought to be carefully proved. In our own experience we have known of one case at least where a man was fined for cruelty, when an experienced veterinary could have convinced the Bench that exercise was the very thing the horse required to work off a stiffness in the hock. The case given below is much more serious in its bearings, and ought to be carefully inquired into, with a view to putting a stop to what we will charitably call a looseness on the part of officials in giving evidence. The President's letter is as follows:—

SIR,—Will you kindly allow me to briefly relate the facts of an alleged case of cruelty to animals which was tried at the Newcastle police-court on Monday last, before Mr. Alderman Gregson and B. C. Brown, Esq. The animal in question, the property of Mr. G. Dickinson, was stopped from working on the previous Monday by the Inspector of the Royal Society for the Prevention of Cruelty to Animals, who asserted that there was a large suppurating wound, the size of half-a-crown, on the back, and that the saddle was pressing into it. I saw the same animal an hour or two afterwards, and found no wound whatever, there being merely an old cicatrix, and, of course, no swelling or suppuration, and no pain. The inspector's evidence was supported by two or three policemen, and the question arose, how were these contradictory statements to be reconciled? I suggested that the horse, which had been continuously worked, should be sent for, and be examined

by the magistrates. This was done, and, finding the facts as I had stated them, they immediately dismissed the case. I have known several cases where great hardship has been inflicted upon poor people by the gross exaggeration and misrepresentation of the inspectors and policemen, and this case points to the conclusion that the magistrates cannot be too careful in investigating them, and not rely too implicitly on their evidence. No doubt the Society is calculated to do a great amount of good; but they should exercise great care in selecting officers who will act with judgment, and have sufficient knowledge to know the difference between a raw wound and an old scar.—Yours, etc., HENRY HUNTER, M.R.C.V.S.—*Sunderland Echo.*

THE PREVENTION OF CRUELTY TO ANIMALS IN INDIA.*

BY R. POYSER, F.R.C.V.S., ARMY VETERINARY DEPARTMENT, "THE CARABINEERS."

THE subject with which I propose to engage your attention this afternoon is one not only of universal interest and importance, but one which is deserving of individual consideration, affecting, as it does, the comfort and convenience of our own lives, as well as those of the dumb animals, domesticated and wild, over which man has been permitted to dominate.

Man's duty towards animals, and their protection from cruelty, have commanded more interest and practical action from us, as a nation, than has been the case with other nations, particularly with some of the Continental ones, where vivisections or experimental operations on living animals—prosecuted merely for the purpose of acquiring manual dexterity in the practice of surgery—are still carried on to an appalling extent.

It is worthy of note, however, that in none of the veterinary schools of Great Britain are these cruel and useless operative instructions on living animals permitted, for it has been proved beyond all question that by practising on the dead subject, the student, whether medical or veterinary, can gain sufficient dexterity to become a scientific and humane operator.

For many years British veterinary surgeons have—and the British Veterinary National Congress in 1881—loudly protested against the unwarrantably cruel practices of their Continental brethren, and, in conjunction with other benevolent and philanthropic persons and societies, have exerted their influence to diminish or suppress the wanton infliction of pain to which animals are subjected without benefit to science, to humanity, or to themselves.

There is another class of experimental operations to which the term vivisection is also applied, but wrongly, especially by the anti-vivisectionist, who, in his zeal and desire to suppress cruelty, allows himself to be carried away by impulse and false sentiment, rather than to listen to the truer dictates of reason, or to be guided by the teachings of science.

These experiments, as opposed to those wherein pain is unnecessarily inflicted on living animals, are undertaken for scientific and humane purposes, for the good of the animals themselves, and for the permanent benefit of mankind.

In such cases, therefore, who shall say that the infliction of pain is wanton, or that it is unjustifiable?

Our greatest veterinary authority, Mr. George Fleming, in the March issue of the *Nineteenth Century*, when writing on "Vivisection and the Diseases of Animals," observes that, "in elucidating the processes of

* A lecture delivered at the United Service Institution of India, at Simla, on the 21st June, 1882, the Hon. J. Gibbs, C.S.I., Member of Council, in the chair.

disease, in framing preventive measures, in investigating the spread of contagious disorders, as well as in perfecting modes of cure, and the most humane methods of operations, experiments on living animals are *absolutely necessary*, for their own interests, no less than for those of mankind.

"Veterinary medicine and surgery are based on humanity, no less than on utility, and their aim is to relieve or alleviate pain amongst the animals placed under the dominion of man.

"By experiments in pathology, disease and mortality have been vastly diminished, and continued experiments in the same direction will cause further diminution. If mankind benefit, so do animals. A discovery which will avert disease in one, will probably do so in others. To prohibit resort to experimental pathology would be at once to doom creatures, which we are bound to protect, to the endurance through all time of terrible suffering from diseases that might otherwise be vanquished.

"Abhorring cruelty in every shape, and desirous of abolishing it by every possible means, I must nevertheless deprecate the attempt to place a barrier across the path pursued in pathological investigations on animals."

By experimenting upon them pathologically, Pasteur, a distinguished Frenchman, has perfected one of the most remarkable discoveries of the age in medicine; not only has he manipulated and fully recognised the disease-producing agent, but has succeeded in conferring an immunity against it by inoculating healthy creatures with the infective material which has been subjected to artificial cultivation in appropriate fluids.

As vaccination is an almost certain preventive against Small-pox, so is inoculation protective against the invasion of the disease called "Anthrax," to which my observations chiefly allude.

Without experiments on animals, this practical truth could not have been arrived at; and yet it is these experiments which are being written down and clamoured against; and though they may have been numerous, they are calculated to save millions of lives, both human and animal.

It is an astonishing fact, that the very germs, or living organisms—attenuated and made less virulent by cultivation, should, when introduced into the systems of healthy animals, protect them from the fatal malady which the said germs, in their uncultured state, produce.

"Anthrax" is not the only disease capable of prevention by similar means, but I allude to it because of its universal prevalence amongst mankind and animals, and because we recognise a familiar example of its fatality amongst horses in this country, particularly those of the army, under the term of "Loodhiana Fever."

Knowing, then, that Anthrax is incurable whenever it has made good its attack, and that nothing but inoculation will prevent this, I must urge, as I have frequently done before, the advisability of applying the known and unerring results of science to the prevention of that which we cannot cure; but it is to be remembered that the successful manipulation of such intricate measures must be entrusted to experts, who have been specially trained in the principles and practice of so abstruse a subject.

I have been carried beyond the limits of my subject proper, but was anxious to preface it with these remarks, in the hope of creating a deeper and more general interest in the matter of vivisection, and the benefits its tolerance under justifiable circumstances do and will confer, the controversy on which is engaging so much professional and lay talent, and which may be studied, *ad nauseam*, in the current issues of the *Nineteenth Century* and other periodicals.

These remarks, though sketchy, will have defined the very distinct differences which exist between the two recognised forms of vivisection; and that is all I wished to do now. Reverting, however, to the prevention of

cruelty to animals, I would observe that it is a good, humane, and never-ending work, and it is a duty which we cannot conscientiously shirk ; to many it is a pleasure, a constant occupation, and a commendable object for the disposal of their time and means ; to a few it is a hobby, and like the rest of hobbies, is sometimes ridden to death, as we have seen in the question of anti-vivisection.

It embraces a subject we all know something about, some more than others, just as we are in the habit of going about with our eyes open or shut, or have given it thought and consideration, or been brought in contact with it by accident or through official or professional duty.

And whilst it lies in the power of man to be cruel, each one of us meets with opportunities of preventing cruelty to animals domesticated for our necessities and luxuries, given to provide us with food, to use in the pursuits of business, pleasure, and sport, and in the operations of war.

And we are also called upon to extend our protective influence against the infliction of unnecessary pain on creatures of wild and untameable natures, that man cannot or has no wish to domesticate, but which he brings under his command by artifice and the devices of sport, to utilize as food, to keep in captivity in the interests of zoology, or for the gratification and study of an animal-loving people.

No one is entirely independent of the use and comfort of animals. We are too apt to take it for granted that they are born and reared for these and no other purposes ; but a very little reflection will indicate that this is not all, that a certain amount of responsibility exists, which, by virtue of our supremacy over the brute creation, does not rest here, and that we are held accountable for the treatment they deserve and receive in our service, and at the hands of those who are more directly entrusted with their care, management, and employment.

As representatives of a great and humane nation, we are personally under the moral obligation of protecting all animals from undue and unnecessary suffering, and by precept and example of teaching others who may need it to do the same.

If it is the lot of animals to be destroyed for consumption, or on account of accident, or incurable disease, or to prevent the increase and spread of disease, their destruction should be accomplished by the least cruel and most expeditious means.

If conveyed by land or water, for marketable and other purposes, they should not be permitted to suffer by over-crowding, by being improperly secured, or by being carried in unnatural and painful positions ; neither should they be confined to the exclusion of a due amount of air, or kept without food and water for long periods. Over-driving, besides being cruel in any case, is especially so to fat animals, on whose flesh it has an injurious effect, rendering it disagreeable for immediate consumption.

Whether animals are utilized in the ordinary drudgeries of the world, employed in the transport of armies and their requirements, or used in that more questionable career of life called "sport," which to some is enjoyment, but to others torture and death, they should be treated mercifully, and never entrusted to the care and disposal of those who know nothing about them or their wants in health or sickness.

When lame or sick, we should secure the best and most scientific treatment obtainable ; encourage and advocate a more extensive employment of chloroform or other anæsthetic agents in major operations, and set our faces stedfastly against the empirical and grossly cruel operations which are commonly and needlessly practised in this country by uninstructed and inexperienced persons.

Few of the domesticated animals can claim entire exemption from cruelty,

though many, I should say, pass an existence of unalloyed happiness. They may not be actually tortured in the ordinary sense of the word, yet their lives may be nothing less than protracted misery, treated, as some are, with so much apparent and mistaken kindness.

This is exemplified in animals fed for slaughter—though to no appreciable extent in India—and more particularly in some of our pets, which are fed to such an extent and kept so closely confined, that death results from overfeeding and want of exercise. These, however, are not the phases of cruelty which the law recognises, because there would be some difficulty in proving the infliction of unnecessary pain. Nevertheless, the allusion will serve to show how very closely acts of apparent kindness trespass upon the threshold of actual ill-treatment.

It is with the harsher and more pronounced evidences of cruelty that we have to deal—evidences which are constantly coming within observation, whether we acknowledge or ignore their presence.

Now that your attention has been specially directed to this subject, you will call to mind instances of undoubted cruelty that have not cost you more than a passing thought; indeed, cases so oft repeated as to leave the impression that no cruelty at all existed. So much for thoughtlessness, apathy, and habit!

It would be interesting to ascertain how few of the European and native population of India know of the existence of Societies for the Prevention of Cruelty to Animals: probably not one per thousand of the former, nor one per million of the latter.

It is my duty, therefore, to inform you that there are several societies in this country; that the Calcutta Society was formed in 1861, and is under Viceregal patronage; that the Act for the Prevention of Cruelty to Animals has been extended to places in ten districts of Bengal, the city and suburbs of Calcutta, and that certain other and similar legislative enactments have been extended to about twenty-nine towns in Bengal, and to upwards of two hundred in the North-West Provinces, Central India, Hydrabad assigned districts, Oudh, the Punjab, and British Burmah; that Bombay possesses a society, formed in 1874—with a branch at Karachi, started in 1878—under the patronage of the Lieutenant-Governor, and that during 1877 societies were established at Madras and Bangalore. Branches of the Bombay Society are being established at Ahmedabad and Surat in great measure through the exertions of native gentlemen.

The aim and object of these societies, wherever constituted, are the same, their special mission being the prevention of cruel and improper treatment of animals, and the amelioration of their condition generally throughout India.

The means to this end are:—Firstly, The agency of paid European officers, whose duty it is to watch, warn, and caution, or prosecute if necessary, all persons found guilty of inhumanity to animals.

Secondly, The distribution of printed papers in Bengali, Oordoo, Marathi, Guzrati, and the English language, warning the heartless, instructing the ignorant, and providing all with information and useful hints respecting the treatment of their dumb labourers.

Thirdly, The circulation of papers in English amongst the European and educated native community, furnishing information as to the law throughout India, and the means at their disposal for punishing the wantonly cruel, and holding a check upon brutal inhumanity.

Fourthly, Inviting information and suggestions from all who are interested in the cause of civilization throughout India, respecting any barbarous practices, whether arising from carelessness or ignorance, over which these societies may be thought able to exercise any influence towards the

improvement of the treatment and condition of labouring and domesticated animals.

Fifthly, The introduction into schools of books and tracts in English and the vernacular, calculated to impress on youth the duty of humanity towards the inferior animals.

Sixthly, Seeking the aid of the pulpit, the press, and all public instructors, in advocating the principles and objects of these societies having in view the promotion of humanity towards the animal creation.

The important share and influences these societies exert in the education of the people, in the cultivation of those merciful impulses which tend to the growth of humanity, cannot well be overrated.

The Bishop of St. David's, London, in his address at the annual meeting of the Royal Society for the Prevention of Cruelty to Animals, said, he "looked at that society as instituted not merely for the purpose of protecting the brute creation from wanton cruelty, but also as constituted for the purpose of protecting human society from the manifold evil effects which result from the indugence of habits of cruelty towards animals."

To the accomplishment of these praiseworthy ends, the moral support and co-operation of every community are not less sought than its pecuniary aid, to meet the expenses incidental to the Societies' operations, the extent and utility of which, in a field so wide, can only be limited by the extent of means at their command.

The result of the Calcutta Society's operations during the year 1881 is as follows :—

Number of prosecutions	3,887
Number of persons convicted	3,780
Number of persons warned and discharged	118
Number of persons discharged for want of proof ...	10
Equine animals subjected to cruelty	1,123
Bovine " " "	3,224
Porcine " " "	2
Wild birds and poultry "	935
Total	5,284

Result of the Bombay Society's operations during 1880 :—

Number of prosecutions	1,420
Equine animals subjected to cruelty	263
Bovine " " "	1,157
Animals relieved by Society's influence	1,577
Persons cautioned by magistrate	55
Persons warned by Society's agents	99
Private individuals prosecuted	36
Notices served on the Bombay Municipality	24

Out of upwards of 9,000 bullocks employed in Bombay, prosecutions were instituted for cruelty inflicted on 1,157 ; certainly a very high per centage.

Branch at Kurrachi—1878 *to* 1881.

Number of convictions	571
Cases in which convictions were not obtained	15
Number of animals relieved by prosecutions, including horses, ponies, donkeys, bullocks, and camels ...	800

Hundreds of animals in an unfit state for labour are temporarily put out of work on the Society's representations : and many are sent to the Cutch Bhooj grazing grounds.

In 1880 this useful institution, for want of an energetic secretary and agent, suspended work for two months, but afterwards resumed operations.

The Pinjrapole.

There is an endowed and wealthy institution in Bombay, established in 1834, called the "Pinjrapole," used as an asylum for sick, weakly, disabled, and stray animals, of which it sometimes contains over three thousand.

There being insufficint accommodation in the Bombay pinjrapole, a branch was started at Chemboor, in 1844, and another at Bhewndy, near Sallsette, in 1864. In 1832 the East India Company made a regulation to kill annually the dogs on the Island of Bombay, and quarrels having frequently arisen between the Company's sepoys, and the Hindoos and Parsees (ryots)—the act of killing animals, undeservedly as they termed it, being inconsistent with their religion—several petitions protesting against the practices, and requesting prohibition thereof, were forwarded to Government, but to no purpose.

Subsequently Government withdrew the regulation on condition that the petitioners would catch the dogs alive, and send them to other parts and places.

Under able and influential direction, proper arrangements were made for catching, keeping, and feeding dogs and other stray animals, for whose shelter suitable buildings were erected, the whole cost being defrayed by subscriptions and fees levied—under agreement—on certain mercantile commodities, in which Hindoo and Parsee mahajuns dealt.

And it was agreed that this charitable institution should be maintained as long as the Island of Bombay existed. As the funds of the institution accumulated they were invested in landed and house property, Government notes and shares, which may now be valued at ten lacs and thirty-four thousand rupees.

All this property and estate is held under a deed of trust for the benefit of the Bombay pinjrapole and its branches.

In consequence of most of the trade having passed into the hands of the European and Mahommedan communities, the income accruing from fees levied has so much diminished, that were it not for the estate and funds, the institution could hardly maintain such an enormous number of animals.

The Hindoos regard the act of killing animals as a heinous crime (though short of this they stay not their hands at any cruelty), and the rescuing them from persons who would kill them, or from slaughter-houses, an act of charity and merit.

Wherever and whenever they could find animals of any kind placed in such predicament, they would buy and send them off to the pinjrapole to be taken care of and fed.

Although established primarily for the purpose of keeping and feeding dogs and other stray animals, the pinjrapole receives such as may be sent there under circumstances of rescue from slaughter, to please and respect the feelings of certain sections of the Hindoo community, which give the largest contributions to the funds of the institution.

The present annual income, consisting of rents, interests, and dividends, amounts to about one lac of rupees, which is wholly absorbed as follows :—

Feeding animals	50,000
Establishment	21,000
Donations to similar institutions in the mofussil ...	25,000
Repairs	4,000
Total Rs.	1,00,000

Number and description of animals in the pinjrapole on the 18th May 1882 :—

Bullocks and cows	1,652
Buffaloes	93
Horses and ponies	199
Donkeys	6
Goats	249
Deer	1
Pigs	169
Dogs	213
Guinea pigs	16
Hares	4
Europe rats	3
Cats	18
Monkeys	10
Porcupines	2
Parrots	4
Poultry (Gallinaceous)	592
Geese	5
Ducks	120
Partridge	7
Total	3,363

Notwithstanding that this institution has objects in view, which, if not identical, are in close sympathy with those sought for by the Bombay Society for the Prevention of Cruelty to Animals, the latter, in 1877, found it necessary, and did not hesitate to report honestly upon the working of the former; pointing out the serious defects of the buildings, cages, and hospitals; objections in the modes of securing and confining animals; neglect and ignorance in their management in health and treatment in disease; disregard of sanitation; the loss of labour and income attendant upon not utilizing animals that were perfectly healthy and fit for work; the "cruelty" attending the capture of dogs; the "absolute cruelty" resulting from the manner in which birds were boxed up, and the "refined cruelty" imposed by keeping (alive, I presume) animals whose sufferings were most acute, and condition deplorable from emaciation and disease, no attempt being made to treat them properly for their complaints. The Society's suggestions for improvement were sound and well received, the trustees promising to carry them out gradually.

Whether this has been done, I do not know; at all events the pinjrapole is a gigantic and excellent asylum, but, backed up with its enormous income, it might be made more humane, and accomplish much more good for dumb animals and man than it does, if worked under an improved and more intelligent system.

I have been unable to elicit any information from the Madras Societies, my letters remaining unanswered.

The phraseology of the law for the prevention of cruelty to animals is comprehensive, and most of the prosecutions are instituted under the first five sections of Act No. 1 of 1869, which says :—

1.—That the word "animal" shall be taken to mean any domestic or tamed quadruped or bird.

2.—That every person who shall cruelly and wantonly beat, ill-treat, abuse, torture, overdrive or overload, or cause to be beaten, ill-treated, abused, tortured, overdriven or overladen, any animal, shall be liable to a fine which may extend to Rs. 100.

3.—Any person who shall incite any quadrupeds or birds, whether domestic or wild, to fight, or shall bait any animal, or shall aid or abet any one in so doing, shall be liable to a fine which may extend to fifty rupees.

4.—Every person who shall wilfully and knowingly permit any animal of which he may be owner to go at large in any public street, road, or thoroughfare, while such animal is affected with contagious or infectious disease, or shall wilfully permit any diseased or disabled animal, of which he may be owner, to die in any public street, road, or thoroughfare, shall be liable to a fine which may extend to one hundred rupees.

5.—Every person who shall employ or cause to be employed, in any work or labour, any animal, which, in consequence of any disease, infirmities, wounds, or sores, is unfit to be so employed, shall be liable to a fine which may extend to fifty rupees.

These are the main points of the Act, but the Local Governments have the power to extend it to any city, town, station, bazaar, cantonment, village, district, or portion of a district.

From inquiries made, I glean that the exercise of this legal power has not been carried out extensively. The influence of the Act is limited to a very small area compared with the size of the country.

I could wish, and every humanitarian will agree with me in the expression, that the power of the Act should be made to exert its undeniably good intervention in every corner of the peninsula.

Act 3 of 1869 empowers police-officers to arrest, without warrant, any persons committing, in their view, an offence against the aforesaid Act.

Two clauses in the Calcutta Suburban Act, No. 2 of 1866, though not framed with humanitarian views, are not the less operative to that end: the prohibited offence is "driving a hackney or cart with insufficiently greased wheels," and the penalty is a fine not exceeding Rs. 50.

This provision is not only a remedy against a nuisance, but mitigates a great amount of needless and painful labour.

The General Police Act, No. 5, which has been extended to over 200 places on this side of India, renders liable to arrest without warrant, a fine of Rs. 50, or to imprisonment, "any person who wantonly or cruelly beats, tortures, or abuses any animal."

The "Stage Carriage Act," No 16 of 1861, continues in force, section 11 thereof declaring that "any person who shall cruelly beat, ill-treat, overdrive, abuse, torture, or cause or procure to be cruelly beaten, ill-treated, overdriven, abused, or tortured, any horses employed in the drawing, or harnessed to any stage-carriage, or who shall harness to or drive in any stage-carriage any horse, which from sickness, age, wounds, or other cause, is unfit to be driven in such stage-carriage, shall for every such offence be liable to a fine not exceeding one hundred rupees."

The attention of all residents and travellers throughout India is earnestly invited to the power thus placed in their hands to protect those who cannot protect themselves from cruelty: and it is hoped that the *will* to carry this humane duty into effect whenever opportunity offers may not be set aside because of the trouble and inconvenience informants may occasionally be put to.

If the traveller who wrote to the *Civil and Military Gazette*, on the 29th April last, on the cruelty inflicted on the Tonga Service ponies between Rawul-Pindee and Murree, had been acquainted with this law, he would have known how to have acted.

He says: "The weak and wretched state of some of the ponies is disgraceful, the backs and shoulders of many being badly galled by the wretched ill-fitting harness."

This is the condition of many ponies on other dâk lines, especially where natives are the proprietors.

Government is the best proprietor of dâk lines, and so far as the ponies are concerned on the Umballa and Simla roads, I consider they were in the middle of April in a most creditable condition.

With the extension of railways, there will, of course, be a corresponding decrease of the kind of cruelty just noticed, but whilst it lasts, its perpetrators should meet with the punishment the law prescribes.

The enactments alluded to, and some to which I shall not refer, provide for all manner and kinds of cruelty of which you have no conception.

The Germans have a pledge containing a declaration for adults or protectors, and another one for children; the former runs thus: "The undersigned hereby enter the above-named society, and promise to do all in their power for the protection of animals from the infliction or illusage, and to encourage kindness towards them in the minds of all those, especially the young, over whom they can exercise any favourable influence."

The latter runs,—"We the undersigned children enter the 'Great German Covenant for the Protection of Animals,' and pledge ourselves by our signatures never in our lives to ill-use any animal, great or small, and also wherever and however we can to prevent others from doing so."

As I said before, the phraseology of the law is comprehensive enough, but its application is not sufficiently extended, or pushed where it does apply.

The subject under notice may be studied from a moral, legal, humanitarian and veterinary point of view, and this I propose to do in the combined form, rather than under separate heads, for the sake of brevity and simplicity.

The legal and otherwise accepted meaning of the word "cruelty" may be defined as the infliction of pain without justifiable cause.

The application of the law to each specific case is a matter for the judicial discrimination of the magistrate, but the evidence to enable him to decide is, in many cases, incomplete without the testimony of the veterinary surgeon; for which reason the subject of the prevention of cruelty to animals becomes an important branch of veterinary jurisprudence.

The veterinary surgeon is usually called upon to speak as to the existence of pain, its kind, intensity and duration, and his opinion is sometimes asked as to the justification of undoubted pain; for instance, in regard to operations said to have been performed either for the good of the animal or for the welfare of mankind.

In India this professional testimony is not always forthcoming, but wherever available it is wisely sought and gladly given.

The very large proportions of convictions, compared with prosecutions, show very clearly how self-evident such cases of cruelty must have been, and I do not think we can question the equity with which the penalty of the law has been administered.

In a vast Empire like India, which is stocked with more classes of domesticated animals than any other country in the world, and where the moral apathy and callousness of the natives to the sufferings of animals are proverbially true, notwithstanding that some kinds of creatures are regarded by them with a certain kind of sacred sentiment of veneration, it is obvious that infringements of the law must be exceedingly numerous, if not altogether incalculable.

But it would be unpardonable of me to cast all the stones at the natives, because we live in the same kind of glass-house, and cannot afford to be other than discreet in laying our accusations.

Though we have a natural aversion to the careless and wanton infliction of suffering, brought to this righteous way of thinking by the exercise of higher intellect than the native—in fact, educated to it both morally and religiously, all our lives—we Europeans cannot conscientiously and entirely exonerate ourselves from all blame.

At the same time I cannot exculpate the Anglo-Indian resident and traveller from wilfully and directly causing unnecessary pain to the brute creation, partly because certain facts, to which I shall presently refer, do not strike him as acts of cruelty, and partly because of the ignorance which prevails as to the natural constitution and capabilities of animals. Indeed, how many of us treat them as mere machinery, caring little or nothing whether they tire by distance, pace or weight imposed upon them, irrespective of their condition, the state of their limbs from lameness, or their bodies from galls, wounds and disease.

Take, for instance, the dâk or stage-carriage horses, and here we find oft-recurring examples of the infliction of unnecessary pain from overloading and overdriving, both when fitted and unfitted for work.

I have travelled over most of the dâk lines on this side of India—not in the casual manner the ordinary traveller does, thinking only how rapidly he can cover the distance, or how much baggage he has stowed away—but in the exercise of special duties connected with the well-being of dâk horses, and have often observed overloading to be one of their chief grievances, for which the passenger is invariably responsible, and to be blamed. He it is, too, who, tempting the coachman with an extra rupee, forces the pace beyond the bounds of regulation, reason, and humanity.

The rules framed by those whose humane duty it is to arrange matters concerning dâk horses are explicit: they are printed, and pointed out by responsible officials, whose protestations against overloading are often overruled.

Passengers are enjoined to adhere to those rules which have been laid down in fairness to owners, for the benefit of the travelling public, and for the good of a class of animals whose life, at the best, is hard and wearisome.

Then, again, travellers are in the habit of putting themselves up to auction where several companies ply on the same road, and travel by the cheapest agency. This uncommendable course, of necessity, throws inordinate work, and leaves its mark very palpably, on a certain lot of ponies which generally are, or soon become, the least able to bear the strain, and are by-and-by brought into an unfit state for work, and if worked then, cruelty must be inflicted.

Where a line is monopolized by Government or by a private individual, there can be no question of beating down the fare: in the case of three companies working on the same road, it has been found necessary, for many reasons, to fix the same rate for each agency, and if agents are discovered running their dâks for less, their licences are suspended or cancelled.

The magistrate has the power to inspect the agent's books, in which the traveller is expected to vouch that he has paid the full fixed fare. As licences are suspended the inference is patent.

From what has been said, it will be seen that we are individually concerned, unconsciously and indirectly though it may be, in perpetrating—aiding and abetting as the law terms it—acts of cruelty on animals, and when we further contemplate what are the results of overwork, viz., lameness, gallings, wounds, rapid loss of condition, exhaustion and even death, we cannot but feel surprised at our hardness of heart.

I shall now direct your attention to the more common and patent forms of cruelty, some of which come within our power to prevent or suppress: they may appear insignificant, indeed, may not be recognised as such until I point them out. Lameness in forty-nine cases out of fifty is due to pain. The fiftieth may not be, but to some mechanical cause, such as some kinds of anchylosis or stiff joints, or where a displaced bony prominence has limited or altered the action of muscles attached to it, both causes giving

rise to uneven gait, more inconvenient and uncomfortable than painful in its nature.

The precise cause of lameness is occasionally very obscure and difficult to trace, but failing to find any mechanical reason, it must be concluded—as a rule—that pain exists somewhere, and, of course, the more intense the pain, the more severe the lameness, and the less fitted for work is an animal, which, if worked in this state, is subjected to unnecessary suffering.

A horse is often very lame at starting, which apparently passes off in a short time—when he warms to his work, as the expression goes. As long as the lameness lasts he must be in pain, and we are not justified in saying that pain has ceased, though there is an apparent freedom from it as long as he is kept going.

Our dumb patients do not mislead by shamming, and a long experience has clearly proved to me that lameness invariably arises from pain, a cause for which can generally be found, if looked for, and removed by rest and treatment.

In all Indian cities, stations, and villages, and on all our roads, animals are constantly ridden and driven, and otherwise worked in a state of lameness: it may not be severe, but it is painful, and therefore cruel.

I may be expected to define between lameness which can be justifiably worked, and that which cannot.

This I could not here attempt in justice to the animal, but should require the example before me for decision.

It may, however, be accepted as a maxim that lame animals are all the better for not being worked, and that to work such is cruel.

Horses deemed unfit for work in the army, owing to incurable lameness, or to other maladies, are now, more than formerly, considered unfit for work elsewhere, and, on the score of humanity, are destroyed; than which I cannot conceive a more humane end to the life of the aged, worn-out, or incurably lame troop-horse.

Scarcely a day passes without our being brought face to face with evidences of cruelty to lame animals; some are compelled to work, whilst others are forced about the grazing-grounds to pick up a living they would perhaps not otherwise obtain: for instance, cattle, sheep, and goats suffering from a disease which affects their feet, and in which movement produces the most excruciating pain; various animals whose unprotected hoofs have been worn to the quick on metalled roads, or whose feet have been punctured in shoeing, or permitted to grow long and more horn-like than hoof-like; ekka, dâk, and gharry horses, with all kinds of permanent and temporary infirmities of their limbs; donkeys with the same, and especially with distorted limbs, due partly to their being worked and over-weighted at too young an age, and partly to starvation: polo-ponies whose legs, joints, and feet have suffered considerably from the disastrous effects of pace, weight, sharp-turning, and concussion; racehorses broken down with constant training and running, patched up, and again brought out in the hope of scoring just another win; horses with cracks in their hoofs, through which the blood is oozing; camels with sore feet, enlarged joints, and pads; sacred bulls, whose hoofs have grown so long from disuse, owing to rigorous confinement and neglect, that they could either not walk at all, or only do so on their knees, and incapacitated by other distortions and injuries, even with a broken limb. The exigencies of war sometimes compel the enforced marching of sick and lame animals, but here the cause, to a certain extent, is, perhaps, justifiable. The alternative is, of course, abandoning such animals, which should always be destroyed, and not left to die, and to be partly devoured whilst still living.

(To be continued.)

THE PRACTICAL MAN

THE old-fashioned "practical man" has of late been falling into the rear. We still, of course, have our practical men; indeed, they are in greater request than ever, but their practicality must now be based on theory, and theory was just what the olden type despised above everything. Not such a great while ago, the practical man was everywhere recognised as one whose doings were directed, not by any kind of new-fangled reasoning, but by the light of actual experience. Such men are still to be found, but they are getting comparatively scarce. They are still, however, sufficiently prominent to make every one familiar with the type.

The practical man is a person who prides himself on his hard head and strong common sense, and makes it his boast that he actually does what your mere theorist can only talk about. The old-fashioned farmer presented on the whole the most interesting specimen of the kind. Most middle-aged persons can remember some sturdy old soul who used to wax wroth at the bare idea of rotation of crops or artificial manures. From boyhood upwards such a man would have been accustomed to regard the periodical lying fallow as indispensable to successful farming, and for mere scientific theorists to pretend to show how the fallow might be dispensed with was very much like pretending to show how a man might do without his periodical sleep. The fallow had come to be regarded as an ordination of Nature, endorsed by a lifetime's experience. The necessity had been practically tested, and for mere theorists to question that necessity, and to attempt to prove on the strength of chemical analyses of soils and plants that land might be cropped continuously, was absurd. Even though it promised a considerable addition to the capabilities of a farm, there were many worthy cultivators of the soil who could not for a long time believe in it, and who refused to budge out of the rut which practical experience had proved to be the proper one. It was very much the same in the matter of artificial manures. The proper thing had always been to utilise the refuse of the stable and the farmyard, and to this day there are many farmers who refuse to put any faith in the "jimcrack" productions of the chemist. Even guano they look at askance; and as an illustration of bucolic prejudice, may be mentioned the observation of a veteran agriculturist, who the other day was heard peevishly to complain that potatoes had never been free from disease since guano was introduced. For a great part of a lifetime he had been accustomed to the use of ordinary farm manure, and, as a practical man, he had never been able fully to reconcile his mind to anything that scientific theorists had foisted on the market.

The hard-fisted, hard-headed, practical man was at one time decidedly on the stronger side in any public controversy between the practical and the theoretical, popular sympathy being strongly in favour of the man of deeds as opposed to the man of mere argument, especially of learned argument. Most persons can recall some droll story, some clever skit that has done yeoman's service in its day in the great battle of theory and practice. Who, for instance, has not heard the story of the profoundly-learned savants who set about to decide the course of an underground current? It went into the earth here; the question to be decided was where did this particular stream come out again? After an immense amount of investigation and discussion of geological strata, relative levels, volume of water, and so forth, science came finally to the conclusion that this stream could not possibly be identified with one that emerged on the other side the hill. A rustic native of the locality, however, stoutly maintained that they were one and the same stream, and he put the savants to shame by throwing a turnip into the current on one side the hill, and letting them see it come out on the other. The story has taken two or three different forms, and probably is but a fiction; but it was one of

a kind very common a generation ago when there was no more ready or certain method of raising a laugh in any assembly than by some incident in which "practical common sense" put scientific theory to the rout. The famous archæological inscription which turned out to be "Bill Stump, his mark," was conceived in just this spirit of mischief towards the theoretical and speculative as dissociated from the actual and practical.

People of the type we are considering are not, as a rule, particularly pleasant. Their repugnance to mere theory is equalled usually by their contempt of sentiment and mere matters of taste. If they build a house their "sound common sense" will tolerate any degree of ugliness, provided only it comes up to their standard of convenience. If they plant a garden, it will be mainly with pumpkins and potatoes, and in dress they will be ruled by considerations of what is serviceable alone. Such a man will marry a woman for her skill in pudding-making, and will educate his children strictly with a view to their getting their living. In conversation his style is similarly characterised by the plain and the practical. He is fond of what he calls plain speaking, and never fails to put a disagreeable fact in the most disagreeable light, not from any intention of doing so, but because the baldest and plainest light is the only one that occurs to him, and that usually happens to be the most disagreeable. The truth is, your practical man is usually a very good fellow, spoiled for want of a slight infusion of the ideal in his composition. That which he cannot see, and of which he has had no experience, he is unable to imagine. Sensibilities which he does not himself possess, or which he has never had badly wounded, he cannot understand in another, any more than he can conceive of any sound argument apart from palpable facts. His nature is bounded by what is evident to his senses, and science and its theories make more or less of a demand on his fancy—hence his distrust of it. He is being compelled by the sheer force of facts to recognise in every department of life that there is something in scientific theories, aud that theorists are not necessarily unpractical, while the world at large has long begun to discover that his rule of thumb is behind the times, and that he must either be content to fall to the rear of things or brush up a little.—*The Globe.*

FELLOWS' DINNER.

THE annual dinner of Fellows of the Royal College of Veterinary Surgeons will take place on the opening day of the Royal Veterinary College, at Anderton's Hotel, Fleet Street, London, E.C. Notice of intention to attend may be forwarded to R. Ward, Esq., 1, Dudley Place, Paddington, W.

Proceedings of Veterinary Medical Societies, &c.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL HELD JULY 31st, 1882.

GEORGE FLEMING, Esq., President, in the Chair.

Members present.—Profs. Brown, Pritchard, Simonds, Robertson; Messrs. Cartledge, Anderton, Broughton, Wragg, Dray, Santy, Whittle, Greaves, Woods, Taylor, Blakeway, Batt, Perrins, Cox, Simcocks, Simpson, Sir F. Fitzwygram.

On the motion of Mr. DRAY, seconded by Mr. TAYLOR, the minutes of the last meeting were taken as read.

The SECRETARY read the notice convening the meeting.

Letters were read from Messrs. Cartwright, Reynolds, Walley, and Harpley, expressing regret at their inability to attend the meeting.

The following presentations by Prof. Voelcker were announced: (1) "On Manure Experiments," (2) "Annual Report as Consulting Chemist," (3) "On Field and Feeding Experiments."

Mr. TAYLOR proposed and Mr. DRAY seconded, a vote of thanks to Prof. Voelcker for his presentations.

The resolution was agreed to.

The SECRETARY stated that he had obtained the solicitor's opinion with regard to the use of the crest of the College by members of the College. The solicitor stated: "No person, whether a Member of your College or not, has a right to use the armorial bearings, crest, or motto of the College, without first paying the usual duty, and in this view I am supported by the Inland Revenue Authorities at Somerset House."

Professor SIMONDS, as the Chairman of the Presentation Committee, asked the Council to accept the portrait of Sir Frederick Fitzwygram, which was a duplicate of the one presented to that gentleman. He considered that great honour had been done to the Council by Sir Frederick's kindness with regard to this matter. He suggested that it should be placed in the College, and he hoped that it would be carefully retained so long as the College existed. Some day or other it might grace a hall belonging to the Royal College of Veterinary Surgeons, and be placed side by side with the portrait of the first President.

The PRESIDENT said he was sure the Council would accept the portrait with feelings of gratitude to General Fitzwygram, and that it would be valued and preserved as long as the College existed.

The notice of motion by Prof. Walley with regard to the examinations was ordered to be suspended.

The following reports were read: (1) Report of the Fellowship Examination; (2) Report of the Court of Examiners; (3) Report of the Finance Committee.

Cheques are ordered to be signed in conformity with the recommendations of the Finance Committee.

The report of the Examination Committee on the Matriculation Examination was taken as read.

A letter was read from Professor Walley, in which he drew attention to the fact "that the Certificate in General Education of the Pharmaceutical Society is not included in the Lists of Examinations for the Matriculation Examination."

Professor SIMONDS said it appeared to him that the report of the Matriculation Examination Committee would require very deep consideration on the part of the Council. The first point in it to which he would draw attention was that they had fixed January, 1884, as the date in which the scheme should come into operation. If that were so, all students entering the colleges after October next would be subject to it. He considered that the date was much too early, for the scheme seemed to create almost a revolution in the regulations. The College had only lately obtained an Act of Parliament by which they became a legalised body, and they had power under that Act to register existing practitioners. There could be no doubt that the relatives of these existing practitioners would hereafter become veterinary surgeons. They could only do so by entering one of the schools and passing the Matriculation Examination as now instituted, or as proposed to be instituted by the scheme. Did the Council think that these young men would be in a position to pass such an examination as the scheme proposed at so early a date? Many of the existing practitioners were people of straitened means, and the education which they had been able to give their

sons was not such as would enable the young men to pass the examination. He therefore recommended that the scheme should be postponed until a later date, even as far forward as 1887. He also suggested that an alteration should be made with regard to the certificates received from the College of Preceptors. He spoke with some amount of experience on this point. It should be borne in mind that it was the Royal Veterinary College which originally instituted the Matriculation Examination, and it was only due to that institution to state that from year to year it had gone on making that examination more and more stringent. It was now many years since it placed the examination in the hands of the College of Preceptors, but there were very few candidates who were able to bring with them higher certificates than those of the third degree. He did not remember that there had ever been one candidate who had presented a certificate of the first degree. He therefore thought it would be advisable to strike out the word "first," and substitute the words "second and third." He presumed it was not the object of the Council to limit the number of students who entered the several colleges, as its income was derived from the students. The object should be to encourage as many of them as possible to enter the schools, and that could only be accomplished by making the admission as little stringent as possible consistent with propriety. He was one of those who thought that the Royal College of Veterinary Surgeons was placing itself in a somewhat difficult position by meddling with the Matriculation Examination. It should be borne in mind that the schools were perfectly independent of the Council. In Scotland they might be considered as private institutions, and the London College was under the government of a number of gentlemen unconnected with the Council of the Royal College of Veterinary Surgeons. The Council might therefore render itself liable to an injunction for loss of revenue by the schools if they insisted on a particular matriculation examination. So far as he knew, there was no warrant for such a course in either of the charters, and in fact the recommendation of the Committee would permit every school to adopt exactly what kind of examination it pleased. It was well known that there was at the present time a lower standard in some of the schools than in others, and yet the recommendation of the Committee tended to perpetuate that abuse. The only reason for meddling with the examination at all must be to put all the schools on the same level, but the report did not tend in that direction. It appeared to him that if the Council had power to interfere with the Matriculation Examination, the same questions ought to be submitted to all the schools at the same time, with the same examining board. If there must be an examining board in Scotland and another in England, there should be an agreement between them as to the questions to be submitted. He objected to English history and geography being included in the subjects of examination, because the experience of the London school was that many men, who had a fair knowledge of Greek and Latin, were not acquainted with English history and geography. He would therefore move that the report be referred back to the Committee for reference.

Mr. SIMCOCKS seconded the motion on the ground that the 5th clause of the first paragraph was unnecessary and contradictory. He, however, entirely dissented from the doctrine laid down by Professor Simonds, that the Royal College of Veterinary Surgeons had no right to control the Preliminary Examination. To his mind the prosperity of the schools was a secondary matter compared with the advancement of the profession. There could be no doubt that up to the present time the Preliminary Examination at some of the schools had been little better than a farce. He had seen instances in which candidates had passed, though words were incorrectly spelled all through their papers.

The PRESIDENT explained that the 5th clause was inserted by the Dean of the College of Preceptors. At a meeting last year the Council decided that the report should be referred to the Dean for his opinion. The Dean had been only acquainted with the examination of the Royal Veterinary College, and therefore, perhaps, he thought that the examinations were similar in the other schools. It was evident that the 5th clause would altogether annul the efforts of the College to raise the standard of the profession. With regard to the power of the College to seek for an examination of this kind, the matter had been referred to the highest legal authority in the country—the present Attorney-General—and his opinion was that the College had the power. The necessity for a uniform Matriculation Examination had been apparent to the profession for years. Of all the legalised professions in this country the veterinary profession was the most illiterate. The standard of education had been, and was now, of the lowest description, and until they demanded a respectable amount of education from those who aspire to enter their ranks, they could never attain the position which they desired. It was evident that the schools could not, or would not, take the matter in hand. The Royal Veterinary College had been compelled to reduce its examination to a very low standard in order that it might not suffer by competition with some other schools. It was therefore imperative for the Royal College to take the matter in hand, and it would be a disgrace to them to allow it to stand over any longer. He was convinced that in the profession the feeling was unanimous that a Matriculation Examination should be instituted by the College. It might at first be of a mild description, but it must rise with the times. No complaint could be made with regard to the expense of education now-a-days. With regard to extending the period at which the test was to be applied, in order to benefit the existing practitioners, he thought that those practitioners had been very generously dealt with, and the profession could not be expected to stand still in the matter of education until those practitioners had educated their sons up to a proper standard.

The resolution to refer the report back to the Committee was carried.

Professor SIMONDS suggested that the points to be reconsidered were the following :—Clause II., relating to the certificate of the College of Preceptors, should be altered. The Committee should prepare a scheme for making the examinations uniform in all the schools. Clause V. should be reconsidered, and also the obligatory subjects, so far as English and Geography were concerned, and the date when the scheme should come into operation.

Mr. TAYLOR asked Professor Simonds if he considered that the Council had the power to regulate the Matriculation Examination.

Professor SIMONDS said his opinion was that the Council had not the power.

Professor BROWN said the Attorney-General was rather vague in his opinion, which contained no positive statement that the Council had power to regulate the Matriculation Examination for admission to the schools.

The SECRETARY read the Report of the Parliamentary Committee.

On the motion of Mr. DRAY, seconded by Professor BROWN, the report was received.

Mr. TAYLOR proposed that before any action was taken in the direction of applying for a supplemental charter, the draft should be sent to every member of the Council.

Professor SIMONDS seconded the motion, which was agreed to.

On the motion of Mr. COX, seconded by Mr. CARTLEDGE, Messrs. Fleming, Collins, Duguid, and a Member of the College of Preceptors were reappointed Examiners for the Fellowship Degree.

Nomination of the Board of Examiners.

The PRESIDENT said he thought it would be advisable, if possible, to have one Examining Board for the two kingdoms, as that was the only way in which uniformity of examination could be secured. He therefore advised the Council to keep that point in view in their nominations.

Mr. CARTLEDGE said that such a course would exclude such Examiners as Professor Voelcker and Dr. Burdon-Sanderson, who would not go to Scotland.

Professor BROWN said there was a difficulty about the appointment of a single Board. From time to time there had been applications from Scotland and Ireland with regard to the establishment of separate Examining Colleges for those countries, but the reply had always been that under the present system there was a Board, or a portion of a Board, for Scotland, and the Council was prepared to make similar arrangements for Ireland. Only a few weeks ago a movement was set on foot in Dublin for the old object.

The PRESIDENT said that considerable inconvenience was frequently caused by the non-attendance, at the fixed dates, of the Examiners who did belong to the profession, and it was a point for consideration whether only such persons should be nominated as would be certain to attend the examinations on the appointed days.

Mr. GREAVES considered that the time had arrived when the Examining Board should be confined to veterinary surgeons.

Sir F. FITZWYGRAM thought that if only one Board was appointed for England and Scotland, some of the best Examiners would have to be excluded, because they could not travel from one country to the other. Besides that, the expense would be largely increased. He was himself in favour of a joint Board, and he would suggest as a compromise that there should be separate Boards for the first and second examinations, but only one Board for the final.

The PRESIDENT said his experience was that the feeling of the profession was almost unanimous in favour of the examinations being conducted by members of the profession. It was a strong reflection upon them that they were obliged to appeal to other professions for examiners.

Mr. ROBERTSON considered that it would be acting on a wrong principle altogether to confine the examiners to members of their own body. Their object should be to get the men who were most capable of doing the work. He would propose that separate Boards should be nominated for the first and second examinations, and a joint board for the final.

Mr. TAYLOR seconded the motion, which was agreed to.

Sir F. FITZWYGRAM said it would be a retrograde step to say that they would take an inferior man simply because he belonged to the profession.

The following gentlemen were nominated as Examiners for England: Prof. Voelcker (Chemistry); Mr. F. Dun (Chemistry); Prof. Bentley (Botany); Mr. Walters (Botany); Mr. F. Dun (Materia Medica); Mr. Vaughan (Materia Medica); Dr. Burdon-Sanderson (Physiology and Histology); Mr. Fleming (Anatomy of the Horse and Physiology); Prof. Pritchard (Anatomy of the Horse, and Physiology and Histology); Mr. McGillivray (Anatomy of other domesticated animals); Mr. S. Gamgee (Physiology and Histology).

The following gentlemen were nominated as Examiners for Scotland: Chemistry—Messrs. Crum Brown, Cunningham, and F. Dun; Materia Medica: Dr. Dunsmure; Botany: Messrs. Dickson and Walters.

The following gentlemen were nominated as Examiners for Scotland:—Mr. McGillivray (Anatomy of other domesticated animals); Mr. Vaughan

(Anatomy of other domesticated animals, and Physiology); Professor Turner (Physiology); Professor Pritchard (Anatomy); Mr. Cunningham (Anatomy); Mr. Fleming (Anatomy and Physiology).

The following gentlemen were nominated as Examiners in Class "C" or Final Examination :—Professor Simonds (Cattle Pathology); Mr. Duguid (Cattle Pathology); Mr. Gresswell (Cattle Pathology); Professor Pritchard (Horse Pathology); Mr. Fleming (Morbid Anatomy); Mr. G. Banham (Morbid Anatomy); Messrs. Cartledge, Harpley, and Cox (The Horse); Professor Pritchard (Morbid Anatomy); Mr. McGillivray (Cattle Pathology; Mr. Rutherford (Cattle Pathology); Professor Mayer (Pathology and Surgery of the other domesticated animals); Mr. Alexander Robinson (Cattle Pathology).

The SECRETARY was instructed to send a fly leaf containing the names nominated with the notice calling the next meeting.

The REGISTRAR read the Obituary List.

The SECRETARY read the Report of the Committee appointed to inquire into the cases of fraud committed by members of the profession.

On the motion of Professor PRITCHARD, seconded by Mr. DRAY, the report was adopted.

The PRESIDENT :—Gentlemen, is it your wish that the name of Mr. ——— be removed from the Register of the Royal College of Veterinary Surgeons?

All the members of the Council present (twenty-two) voted in the affirmative; and it was ordered that he be written to and informed of the decision of the Council.

The PRESIDENT said that since the last meeting of the Council there was another member of the profession who had been accused of fraud.

On the motion of Mr. ROBERTSON, seconded by Mr. SIMPSON, the Committee were instructed to take the case into consideration.

The SECRETARY read the results of the Fitzwygram Examination, and the report of the Registration Committee.

Mr. SIMPSON proposed that the recommendations of the Report be carried out, and suggested that the words in the memorandum to be placed at the head of the list be altered from "Veterinary Surgery" to "Veterinary Surgery and Medicine."

The motion and suggestion were agreed to, as was also a suggestion by the President that the circulars should only be sent to members of the profession residing within the three kingdoms.

Mr. SIMPSON proposed, and Professor BROWN seconded, "That the recommendation that additional assistance be afforded to the Secretary be agreed to."

The motion was carried, and the proceedings terminated with a vote of thanks to the President.

SOUTHERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

THE quarterly meeting of this Association was held at the Great Western Hotel, Reading, on July 14th, 1882. Present :—Messrs. Simpson, Windsor; Rock, Chelsfield; Curling, a visitor, of Rochester; Carter, Guildford; Cawthorn, Hadloe; Barford, Southampton; Martin, Rochester, secretary. In the unavoidable absence of Mr. Fleming, President, Mr. Simpson was voted to the chair.

The SECRETARY read the minutes of the last meeting, and said they would not meet in the December quarter. The Secretary stated that he had

received a letter from Mr. Banham, of Cambridge, as to the expediency of having an annual congress of veterinary surgeons in London. The Secretary said the letter had not been discussed, but he had recived another letter from Mr. Banham in June, which was also read, giving an outline of the scheme, but copies of the scheme had not been received. It was thought the Association could not discuss the matter until they had the scheme before them, but that it was desirable that such an association should be formed, that the Secretary should acknowledge the letters and obtain copies of the scheme and distribute them before the next meeting, so that the subject could be properly considered.

A resolution to that effect was moved by the CHAIRMAN, seconded by Mr. ROCK, and carried unanimously.

A letter of apology was read from Mr. Fleming, the President, who announced that he would read a paper at the next October meeting on "Actinomycosis, a New Transmissible Disease of Animals and Mankind."

The next business on the agenda was for the Secretary to read a paper on the Breeding of Horses.

The CHAIRMAN said they had met not only for discussion, but to visit the Royal Agricultural Show. The paper ought to be read before a full meeting, and fortunately it was one of those things which would keep. Therefore, if it met with their approval, under the special circumstances in which they had met, instead of going on with the meeting he should be willing to ask them whether it would not be better that the meeting should stand adjourned.

Mr. CARTER proposed "That the Secretary be requested to postpone his paper till the next meeting."

Mr. ROCK seconded the motion.

The SECRETARY said he had written the paper for the Rochester Farmers' Club and he thought he would read it at a meeting of veterinary surgeons. It ought to be read at all farmers' meetings to encourage farmers to breed horses, and after what Mr. Mundella had said—that the diseases of cattle had been reduced lower than for the last quarter of a century, and thanking veterinary surgeons for their usefulness to the agricultural interest, the value of which they had considerably enhanced—he (the Secretary) should propose that in order to carry that further, all veterinary surgeons where farmers' clubs are, should use all the energy they could and read papers to show agriculturists that veterinary surgeons were a useful and scientific body. That was why he read his paper upon the breeding of horses. The result of that paper was that they had formed a company, and it was rather important to know that it was well received, and that it would really do some good in their district. He wanted to impress that upon the veterinary surgeons in all districts. The company they had formed was the "Rochester Cart-Horse Society." They had not decided whether they should have a Clydesdale or Shire horse, or both. The object of the company was to keep a cart-horse stallion. The Secretary read the prospectus of the company. Instead of the little weeny pony cart-horses now found, if they could improve the breed of horses they would confer a great boon upon the agricultural interest and enhance the prosperity of agriculturists to some extent. With that view he had read his paper.

Mr. ROCK said that in some districts the landlords bought a good stallion for the use of their tenants.

The SECRETARY said they wanted numbers to take an interest in the matter. Some persons would buy a stallion for themselves. They had good mares, but their difficulty in his district had been to get a good stallion. All their farmers had visited the show, and he thought they were in a fair way of getting a good stallion.

Mr. CURLING related similar experience.

The CHAIRMAN said they were indebted to Mr. Martin for the remarks he had made. There was no doubt that the veterinary surgeon of the future, and indeed of the present, must consider himself no longer a simple machine to go and doctor a sick horse or cow, but he must be an intelligent man who is able to inform all classes of his clients. He must know not only how to attend to a sick horse, but his advice must be sought and his opinion respected on other matters. He must be, in fact, a horse-man, and add a thorough knowledge of stock to other matters. It was with that object that the increased work was put upon the student entering at college, with a view to turning out better men; and they knew how necessary it was that more skill and intelligence should be possessed by those who were in the veterinary profession. He could only say that the attempt of Mr. Martin to bring under the notice of farmers their requirements was a right and proper thing, and he had no doubt that it would succeed. There were good horses about, and many ways of getting good horses. He did not know whether it was the best way to buy two horses at £500, as horses were subjected to all the ills which horseflesh was subject to.

The SECRETARY said they were necessary.

The CHAIRMAN said it was possible to buy one and hire another, and see how the thing went on. They knew things would happen when they were least expected to happen, and if a horse went wrong it would be a bad business for the shareholders or the advocates of the scheme. He did not say that with the view of deprecating the scheme. There was no doubt a very large number of cart-horses in the hands of a few private influential men, and if they could get hold of a horse with a reputation they might possibly put more money into their pockets, and do more good to their Association and their district, because that horse might do better than their own selection. People would run after name, unless the horse came from a good stock or good breeder, and they might be shy of coming to their horse. Let them get as many people to buy mares as they could, and commence breeding at once.

The SECRETARY said they did not want to keep the horse for the winter.

The CHAIRMAN said they would avoid that by hiring. When they had the right horse, they would have so many applications that they must pick the best mares.

Mr. ROCK said that any one letting a horse would limit the number of mares.

Mr. CURLING said the farmers round him would say that if they could not find a horse themselves they would not have him.

The CHAIRMAN said he was looking into the matter from a shareholder's point of view. The horse might have something the matter with him.

A member said he might not get foals.

Mr. ROCK said they might hire with a view to purchase at the end of the season.

The SECRETARY read an extract from his paper stating that a suggestion that Lord Darnley should buy a horse was ridiculed by the farmers.

Mr. ROCK said he congratulated their friends in Kent that after the late depression in agriculture they were in a position to use such words. (Hear, hear.)

The discussion on this subject then terminated.

Mr. ROCK showed a specimen of renal calculus which he had taken from an entire donkey, which he said was under his charge a month or two ago. There were no symptoms, except that it was excessively debilitated, and, generally speaking, had rather pallid membranes, obstinate constipation of the bowels, and almost total loss of appetite. He heard that about twelve months ago the donkey was cast, and the urethral canal laid open, and a

piece of the calculus taken out. After going on some time he felt sure there was more of that material in the urinary organ, and the donkey had got a highly broken-down and diseased condition of the liver; and he found the whole of the pelvis of one kidney was entirely gone except the cavity which the calculus filled up. He thought it rather a unique specimen, and never saw anything like the quantity in the pelvis of a kidney. The poor thing, without any symptoms to guide one, pined away and died. There was no stone in the bladder. It was a capital donkey, and beat the ponies of the neighbourhood. It belonged to a fruiterer, and it could do more work than the ponies could.

The CHAIRMAN then proposed that the meeting do adjourn.

The SECRETARY proposed that the next meeting be held in London.

The CHAIRMAN suggested that they should have Mr. Fleming's paper then, and the Secretary's paper in the country, as the subject of the Secretary's paper was more of a country one.

It was proposed that the Central Veterinary Medical order should be invited to join them at the next meeting in London.

The SECRETARY proposed a vote of thanks to the Chairman, and congratulated him on being elected a member of the Council, and said he hoped that next year they should have a second member in Mr. Barford. He thought they would run very well together. They had only to be properly organized to show their strength as the Northern Counties do; they carried whom they selected just as they liked. They united with them in asking them to support their members, and they supported the Southern Counties' member. Mr. Barford told them to run one horse first, and feel their way, and then get two in next time. If they could get two in next time the Southern Counties Association would be properly represented.

Mr. ROCK seconded the motion, and said it was a very rare occurrence that a young society like theirs should succeed the first time of asking. It had shown that there was a feeling abroad that the members of the Council should be distributed all over the country, so that all parties should be represented. It augured well for their organization, and it was a little stimulus to them to have such a distinguished member as their present chairman to represent them.

The CHAIRMAN said he would not detain them with a long speech, but he should be wanting in courtesy if he did not acknowledge the honour which they conferred upon him in selecting him as their member at the College of Veterinary Surgeons, which was a distinguished position and one of some responsibility. He could only say, as their representative, if he could in any way assist in promoting their interests especially, he should esteem it a great privilege to have the opportunity of doing so. As a member of the Council, and representing the profession at large, there was, no doubt, a great deal for any man to do, if he cared to do the work. He had gone into the Council to do as far as he could his part honestly and fairly. They knew there were many matters stirring which required anxious consideration and careful legislation. He assured them they would have his best attention. They spoke of running another horse another year. Of course he should be only too proud to have as a colleague another member of the Association. If they should have Mr. Barford, they would run a gentleman whose name was well known, not only in the immediate neighbourhood, but the country generally, and he thought they could not select a better candidate. With regard to the proceedings of the day, he was much obliged to them for the vote of thanks which they had accorded to him. The duties had been almost nil. He wished that they had had time to have had the paper and had a full discussion. He could only tell them that he felt grateful to them for electing him chairman, and if he were

called upon again, that they would have a fuller attendance and more business to do.

The meeting then ended.

YORKSHIRE VETERINARY MEDICAL SOCIETY.

THE usual quarterly meeting was held at the Queen's Hotel, Leeds, on Wednesday, the 26th of July. In the absence of the President, Mr. Jas. Freeman, a Vice-President, took the chair; the following members were also present, viz., Messrs. Greaves, Anderton, J. S. Carter, Scriven, Parlane Walker, Lodge, Tatam, B. Smith, Geo. Carter, G. Whitehead, and the Secretary.

Messrs. E. T. Cheesman, 5th Dragoon Guards, F. W. Greenhalgh, and H. Carter were present as visitors.

Apologies for non-attendance were received from Messrs. Dray, Naylor, Ferguson, Joseph and Jno. Freeman, Bowman, Snarry, Peter Walker, Nettleton, Danby, and J. M. Axe.

The Minutes of the previous meeting were read and confirmed.

Mr. Geo. Whitehead, M.R.C.V.S., Batley, was unanimously elected a member.

Messrs. F. W. Greenhalgh, Leeds, and H. Cooper, Huddersfield, were nominated for membership.

The SECRETARY read a letter from Mr. Banham relative to the formation of a Veterinary National Association.

After some discussion as to the provisions of one or two of the projected rules, it was decided to support the formation of the association, and Messrs. J. S. Carter and the Secretary were appointed delegates to act upon the provisional committee.

The subject of the testimonial to Mr. Fleming was introduced, and several subscriptions of one guinea each were announced.

Mr. TATAM gave notice that at the next quarterly meeting he will propose the following resolution: "That the Members of this Society bind themselves to adopt a uniform charge of one guinea for examining a horse as to soundness."

Mr. GREAVES desired to know the opinion of the members as to whether they thought that the time had arrived when the members of the Board of Examiners, with the exception of the chair of botany, should be members of the Royal College of Veterinary Surgeons.

After some discussion, the majority thought that the time had arrived when the proposed change should be adopted.

Mr. CHEESMAN exhibited two singular cases of foot disease; one a case of *Keratoma*, or protrusion of the horny lamine upon the outside quarter of the off fore foot, with a corresponding depression in the Os pedis. The other case was accompanied with lameness, a piece of horny structure about 1½ inch long and 1 inch in circumference being exfoliated from the toe, the case quite recovering.

Some discussion upon the above cases, and also upon the fact that certain horses are doing regular work without shoes, and others with the aid of the Charlier shoe, followed, in which Messrs. Tatam, Greaves, Freeman, etc., joined.

Mr. GREAVES kindly undertook to read a paper at the next meeting upon the subject of Puepura Hœmorrhagica, or Blood Poisoning.

CENTRAL VETERINARY MEDICAL SOCIETY.

THE monthly meeting of this Society was held on the 20th of July, at 10, Red Lion Square. The President, Mr. J. Woodger, jun., occupied the chair; also present were Messrs. J. Atkinson, G. A. Banham, A. Broad, Arthur Broad, A. B. Daniel, G. Fleming, G. Grav, H. J. Hancock, W. Mole, T. Moore, F. G. Samson, H. K. Shaw, C. Sheather, R. Ward, and F. W. Wragg.

Mr. BANHAM, in response to the call of the President, explained to the meeting the details and objects of the scheme for forming a British Veterinary Medical Association.

M. FLEMING said that it was decided at the Congress that an Association, such as the one alluded to, should be formed; he was in favour of the scheme, and thought it would be of the greatest benefit to the profession. He therefore moved that the Society should support the project, for the furtherance of which Mr. Banham had attended the meeting.

Mr. WARD seconded the proposal. He thought a National Association would lead the public to form a higher opinion of the profession as a scientific body, and would be a further means of increasing the unity and good fellowship so much to be desired.

Mr. BROAD said the Association proposed was, in its aim, somewhat similar to the British Medical Association, the meetings and annual gatherings in connection with which were most successful and interesting. He thought the project would be favourably received by the profession, and that the Society should lose no time in giving its assistance.

Mr. Fleming's proposition was then put to the meeting by the President, and carried unanimously; and Messrs. Woodger and Broad were selected to represent the Society at the preliminary meetings for the formation of the National Association.

Mr. FLEMING exhibited a fractured navicular bone, the history of which he had related to the Society at a former meeting.

Rabies.

The subject for the evening's discussion, Rabies, was then introduced by Mr. FLEMING. In the course of his remarks he said it was evident that the disease was now very prevalent amongst our dogs, and that its wide extension was due to want of efficient sanitary measures.

The chief centre of morbid changes was to be found, he said, at the base of the brain, in the region of the medulla oblongata. All the fluids of the body are virulent, but especially so are the saliva and brain fluids, as has been recently demonstrated. It is, he remarked, largely to the public recognition of the initial symptoms of the malady, that we must look as a means of extinguishing it. The importance of this point should be recognised by Government.

Mr. Fleming said he had recently inclined to the doctrine that these virulent maladies, which owe their existence to germs, cannot be self-generated. Many facts in the history of Rabies and its geographical extension, are worthy of note. The disease has been known in Europe for a very long period, whereas in certain parts of the world it has never appeared. In the island of Mauritius, Rabies has prevailed since 1812; but in the adjacent island of Reunion, where severe restrictions are imposed upon the admission of dogs, the disease has never been seen; the same immunity has been enjoyed in Australia and New Zealand. The last-named countries have been populated by dogs from England, but evidently free from contagion when imported. In the Isle of Mauritius no precautions are taken with regard to the admission of dogs. In the knowledge of these facts we

have a powerful incentive to resort to extreme measures for the utter extinction of the malady. One step to this end, which has always been very successful on the continent, is a reduction in the number of dogs; therefore, the tax should be raised. Every dog should wear a collar with a registered number upon it; the owner of each dog would thus be known, and responsible for damage done. Then, again, the public should be informed as to the initial symptoms of the disease.

Mr. Fleming referred to the suggestion, made by him some years ago, that a description of these symptoms should be printed on the license paper; then, as soon as any suspicious symptoms appear, the animal should be subjected to the examination of a veterinary surgeon. All animals bitten by a rabid dog should be destroyed. In conclusion, Mr. Fleming said he was of opinion that, until it was recognised by Government that this was a disease which could be stamped out, we would continue to suffer from its visitations. The number of useless dogs was a source of danger to the community, and it behoved the members of the veterinary profession to show, in every possible way, the danger incurred by the public in allowing Rabies to exist in their midst.

Mr. BROAD expressed the indebtedness of the society to Mr. Fleming for so ably introducing the topic of discussion. The study of Rabies was, he said, important; at any time the disease might become so prevalent as to force itself upon the notice of Government, when we should be expected to be well to the fore with a true knowledge of it, and efficient measures for its prevention. Recent researches had thrown light upon the malady, especially the experiments of M. Galtier. From many points the subject was worthy of discussion; the varying way in which the symptoms are sometimes manifested; the situation of the virus during incubation, some had held that it remained in or near the bitten part, but from this opinion he differed. The *post-mortem* appearances also were deserving of consideration; he had recently had a marked illustration of the gorged spleen, said to be characteristic of Rabies.

Mr. WARD concurred with Mr. Fleming's suggestion that an outline of the primary symptoms should be given to the public, and related an instance of an owner of a dog obstinately refusing to believe Rabies was present because the animal showed no aversion to water, and was able to drink; the dog was undoubtedly rabid, and had bitten several people. He said that the term Hydrophobia was answerable for much of the misconception existing with regard to the symptoms to be expected from a mad dog, many persons, knowing the meaning of the name, expect to find the dread of water. Then, with regard to another mistake, running of saliva, or foaming at the mouth, is by no means constant.

Mr. SHEATHER said he had reason to believe that Rabies was now widely prevalent in the metropolis; he had had two cases under his notice within the last eight days; one case he related to show that not only have we to enlighten owners of dogs as to the symptoms of danger, but to be prepared for wilful perversion of facts concerning the symptoms and history of the outbreak.

Mr. DANIEL considered sufficient facts had been brought forward at the meeting to induce us to urge the inclusion of this disease among those named by the Contagious Diseases (Animals) Act. He was glad to hear that Mr. Fleming now considered that Rabies spread by contagion only, thus agreeing with the earlier writers. He also had found lesions in the brain in the situation named by Mr. Fleming. A question occurring to him was, could the bite of an animal incubating Rabies result in danger? He also asked for the opinion of the meeting as to the number of days an animal will live after showing rabid symptoms?

Mr. ATKINSON said he had seen a large number of mad dogs during the last two months. He considered it would be most difficult to lay down instructions by which an ordinary individual could recognise the disease; it was not always easy, and he believed that some veterinary surgeons fail in diagnosing it. Many fits simulate Rabies in symptoms to a certain extent. On the other hand, rabid dogs are sometimes thought to be in a fit; in the case of one dog thus brought under his notice, he diagnosed Rabies from the appearance of the eyes. In another instance, the only symptoms were peculiar dullness and nervous excitement.

Mr. T. MOORE thought the preventive measures suggested by Mr. Fleming were rather drastic, and that the diversity of the symptoms would be an obstacle to its early recognition by the public. A theory put forth by Mr. Moore, Sen., he considered feasible: it was to the effect that dogs may have a mild attack of Rabies and recover, but yet spread the disease during the time the slight symptoms are manifested. There are many cases in which madness follows the bite of dogs which, to all appearance, were not rabid at the time of the infliction of the wound. He would also ask, Could a dog with Rabies in incubation transmit it by a bite? if so, it would be difficult to deal with.

Mr. SAMSON was of opinion that fits should not be mistaken for Rabies rabid dogs do not run about in the violent manner of a dog in a fit, nor are they similarly convulsed. He agreed with the proposal to enlighten the public as to some of the most notable symptoms, by printing symptoms on the licence, with instruction as to the advisability of quickly seeking medical advice in cases of doubt.

Mr. GRAY said that what experience he had had of Rabies led him to suggest care in condemning dogs brought for examination while in a state of excitement. He remembered once securing a dog thus brought to him, supposed to be rabid; by the next morning he saw that the attack was Epileptic, though so serious that he destroyed the animal. The only morbid appearances were congestion of the brain and much effusion at its base.

Mr. BROAD was of opinion that a little instruction on the licence papers would be of great benefit. There were cases of uncertainty and doubt, but as a rule rabid dogs had such a characteristic appearance and manner, from the earliest onset, that to any one with a fair amount of experience there should not be difficulty in selecting the right cases for suspicion, if they are not advanced enough for a positive diagnosis. He also had found that rabid dogs have sometimes unimpaired power of swallowing both solids and fluids. The duration of attack he had not found to exceed six days.

Mr. K. SHAW said he had not heard any one draw attention to the peculiar howl of a mad dog as a diagnostic symptom, and related cases in which it had been a marked feature. He thought it important to obtain all the information possible as to the history of the dog, and the circumstances attending the attack, as the diagnosis of Rabies was sometimes difficult.

Mr. BANHAM said that if, by printing on the licences the early symptoms of Rabies, we merely put the owners of dogs on their guard, and cause them to seek advice, we would do good. One notable symptom was, he thought, the protrusion of the membrana nictitans. He expressed a hope that Mr. Atkinson had taken advantage of his recent opportunity of making numerous autopsies. He considered that the most diagnostic sign was the presence of foreign bodies in the stomach.

Mr. WOODGER said he entirely agreed with the proposition of Mr. Fleming with regard to the licence papers; the notice of symptoms might not enable the dog owner to distinguish the disease, but would cause him to consult some one who was better informed. He did not think Rabies was ever of spontaneous origin, and said that in nineteen cases out of twenty it could be

traced to the bite of a rabid dog. The measures for stamping out the malady might be applied in a district during its prevalence, and suspended at other times. In one year a great number of dogs were brought to him suspected of being mad ; sometimes the cause of derangement was Epilepsy ; in some cases the owners thought a bone or hair was in the dog's throat. In some instances he had found the singular howl sufficient to prove the nature of the disease, even before it was suspected by the owner that anything serious was the matter. He had found a great diversity in the symptoms : some dogs will not bite, others do not bark or howl, and some need careful watching before sufficient evidence of their condition can be obtained. The word Hydrophobia is misleading. He had occasion to write to a local paper correcting some glaring errors which had been published in one of its articles; the editor in reply said that possibly Mr. Woodger was right as regards Rabies, but that after all that was only a mild form of Hydrophobia. The duration of attack he had found did not exceed a week. He mentioned two instances of suspicious symptoms and unusual aggressiveness being shown by dogs, but due entirely to a temporary condition of ill-humour and irritability.

Mr. FLEMING said the discussion had afforded him both pleasure and information. He expressed regret that medical men were so ill acquainted with the subjects of our studies ; the *desideratum* was the delivery of addresses on animal pathology in our universities. He had not alluded to the symptoms, taking it for granted that all were well acquainted with them. A general symptom was undoubtedly a change in the habit of the dog ; then a change in its temper. Especially is it aggressive to its own species and to strangers ; then there is a depraved appetite, and a tendency to wander. Efforts at swallowing, in the dog, do not cause that spasm of the glottis or respiratory muscles which in the hydrophobic patient so often threatens asphyxia. He did not think there was alteration of the fluids of the body till the early symptoms were developed, consequently during the latent stage the bite of the animal would be harmless. He considered that the maximum duration of life after the first symptoms appeared might be set down as ten days, the average period being five or six days. The muscles of the lower jaw are actually paralysed in many instances, yet great risk would be incurred by inserting the finger in the mouth, as reflex action would cause closure of the jaws. Several veterinary surgeons had lost their lives through thus attempting to explore the fauces. Inoculation of a rabbit might be resorted to as a test in a doubtful case. The long period of latency is difficult to be accounted for ; probably the germs are localised in some part of the system, and required only a certain stimulus to rouse them into activity ; it was curious to observe that lengthened latency was so rarely seen in experimental inoculation. Enlargement of the spleen and dark colour of the blood are noteworthy features of this disease. When applied to for recommendations, with the view of excluding Rabies from Australia, Mr. Fleming advised that dogs from other countries should be absolutely refused admission, or should be put under quarantine for a long period—for six, or even twelve months. In the island of Reunion, the authorities, knowing the extremely long latency of the malady, have entirely prohibited dogs from landing.

The thanks of the meeting were cordially tendered to Mr. Fleming for his address.

ALFRED BROAD, *Hon. Sec.*

ROYAL AGRICULTURAL SOCIETY.

AT the meeting of this Society, held on July 12th, the Hon. W. Egerton (Chairman) reported that the under-mentioned veterinary surgeons, nominated the previous month, have accepted office :—Mr. C. Stephenson,

Newcastle; Mr. J. S. Carter, Bradford; Mr. W. Lewis, Crewe; Mr. D. Gresswell, Louth; Mr. W. F. Garside, Royal Agricultural College, Cirencester; Mr. T. J. Merrick, Northampton; Mr. G. A. Banham, Cambridge; Mr. Wm. Moir, Cardiff; Mr. W. Penhale, Barnstaple; Mr. T. D. Broad, Bath; Mr. Wm. Bromley, Lancaster; and Mr. Osborn Hills, Leamington. The following are the terms and conditions of the appointments:—

Members may obtain the attendance of the veterinary surgeon in any case of disease by paying his travelling expenses (which include railway fares, and 1s. per mile if by road, including the return journey), and the cost of his visit, which will be at the following rate, viz.:—

	£	s.	d.
When the whole day is occupied	1	10	0
When half a day or less is occupied	0	15	0
Personal consultation with veterinary surgeon ...	0	10	0
Consultation by letter	0	5	0
Post-mortem examination and report thereon ...	1	0	0

A return of the number of applications from members of the Society during each half year is required from each veterinary surgeon.

This report was adopted.

NEW MEMBERS OF THE PROFESSION.

AT the several meetings of the Scottish Section of the Court of Examiners of the Royal College of Veterinary Surgeons, held in Edinburgh and Glasgow on the 13th, 14th, and 15th of July, 1882, the following students passed their "Final" Examination and received their diploma:—

Edinburgh Old College.

Mr. *J. F. Coleman	Sutton, Surrey.
„ W. C. Crondace	Haltwhistle.
„ *B. D. Pierce	Mass., U.S.A.
„ James Pow	Hawick.
„ *W. J. Welsby	West Derby, Liverpool.
„ M. P. Walsh	Sligo, Ireland.
„ G. W. Tennant	Carlow, Ireland.

Edinburgh New College.

Mr. C. T. Barnes	Uttoxeter.
„ J. N. Barber	Poynton, Stockport.
„ J. H. Carter	Bradford.
„ T. C. Bradshaw	Port Louis, Mauritius.
„ *H. H. Harrison	Chatsworth.
„ J. R. Jones	Llanrwst, Denbighshire.
„ G. C. O. Fowler	Greenock.
„ J. McLaren	Edinburgh.
„ G. Hutchinson	Great Eccleston.
„ R. M. Sunderland	Hetherton, Halifax.

Glasgow College.

Mr. J. M. Magill	Hilltown, Co. Down.
„ William Wright	South Sanquhar.
„ R. J. Maguire...	Pollokshields.

* Marked thus passed with "Great Credit."

The following students passed their "Second" Examination at the meetings of the Scottish Section of the Court of Examiners, held in Edinburgh and Glasgow on the 11th and 12th July, 1882 :—

Edinburgh Old College.

Mr. W. Anderson.
„ C. T. Lang.
Mr. *W. J. Marsden.
„ *J. F. Mahoney.

Edinburgh New College.

Mr. J. Ashton.
„ J. W. Bennett.
„ A. Hanson.
„ T. Bell
„ W. Kidd
„ *A. W. Lawson
„ J. McCauley.
Mr. *W. H. King.
„ Th. O'Malley.
„ *Th. Platts.
„ C. T. Richardson.
„ William Scott.
„ *Robert White.
„ *James Young.

Glasgow College.

Mr. Joseph Larkin
„ *Robert McNair
„ *J. J. Ross
„ *Robert E. Weir.
Mr. M. B. Scouler.
„ G. Frew.
„ G. McGregor.

* Marked thus passed with "Great Credit."

The following passed their "First" Examination at the meetings of the Court of Examiners, held in Edinburgh and Glasgow on the 8th, 10th, 17th, and 18th July, 1882 :—

Edinburgh Old College.

Mr. *F. Ashley.
„ Joseph Barclay.
„ *H. Barrett.
„ A. W. Barnes.
„ *C. Cowie.
„ *W. R. Davison.
„ R. C. Irving.
„ William Kent.
„ *Alfred Kershaw.
„ Charles Ladds.
„ P. Duffy.
Mr. *Charles McEachran.
„ B. O. Meek.
„ Alexander Robertson.
„ George Robertson.
„ Alexander Wood.
„ Charles Tait.
„ T. J. Walsh.
„ Henry Wilkinson.
„ Richard Quinn.
„ James Graham.

Edinburgh New College.

Mr. William Berry.
„ James Borthwick.
„ Robert Brizell.
„ M. Carroll.
„ G. Hulme.
„ S. Jackson.
„ Alexander Lennox.
„ *W. Lothian.
„ D. Lyons.
„ J. Malone.
„ S. W. Martin.
„ C. Dyson.
Mr. J. Forgham.
„ A. Isledhill.
„ *A. J. Haslam.
„ J. Nadal.
„ James Purdy.
„ Joseph Purdy.
„ J. J. Ridley.
„ James Richardson.
„ *T. A. Rudkin.
„ George Wilks.
„ [illegible]. Charnock.
„ [illegible]. Hollands.

Glasgow College.

Mr. S. M. McConechy.	Mr. N. B. Green.
„ *A. L. McMillan.	„ *R. Malloch.
„ *A. Stewart.	„ C. M. Smith.
„ A. C. Forbes.	„ W. Macdonald.
„ *R. H. Gilmore.	„ A. A. Leekie.
„ *A. Edgar.	„ *T. Butcher.
„ *F. P. Bennett.	„ J. Hart.
„ J. K. Calderwood.	„ J. Jolly.
„ A. W. Mackeand.	„ F. Kerr.
„ A. Murdoch.	„ *R. T. Huston.
„ R. Baird.	„ J. Beevor.
„ *R. D. Dove.	—

* Marked thus passed with "Great Credit."

THE NEW VETERINARY COLLEGE, EDINBURGH.

AT the termination of the summer session of this Institution, sixty-four students presented themselves for examination before the Board of Examiners of the R.C.V.S., at the Freemasons' Hall, Edinburgh. Forty-eight of these succeeded in passing their examination, ten doing so with great credit.

At the pass examination, the following gentlemen received their diploma, and were admitted members of the R.C.V.S. :—Messrs. H. H. Harrison,* Edinsor, Derbyshire ; J. N. Barber, Stockport ; C. T. Barnes, Uttoxeter ; Jas. McLaren, Edinburgh ; G. C. O. Fowler, Greenwich ; J. R. Jones, Llanrwst ; T. C. Bradshaw, Mauritius ; G. Hutchinson, Leyland ; R. M. Sunderland, Halifax ; J. H. Carter, Bradford.

The following gentlemen were successful in passing the second examination :—Messrs. J. Young,* Cockermouth ; A. W. Lawson,* Denning ; T. Platts,* St. Helens ; R. E. White,* Tadcaster ; W. King,* Coventry ; A. E. Hanson, Halifax ; J. W. Bennett, Leigh ; E. T. Richardson, Alford ; Jas. Ashton, Bolton ; T. Bell, Arbroath ; W. Scott, Clonmel ; W. Kidd, Alexandria ; Jos. McCauley, Carlisle ; O'Mally, Ennis.

The following gentlemen passed the first examination :—Messrs. A. J. Haslam,* A. Lennox,* T. A. Rudkin,* W. Lothian,* Jas. Malone, W. Berry, Jas. Richardson, Jas. Borthwick, R. G. Brizell ; D. Charnock, G. Hulme, M. Carroll, J. Ridley, S. W. Martin, C. Dyson, S. Jackson, T. Nadal, Jas. Purdy, Jos. Purdy, D. F. Lyons, A. Gledhill, G. Wilks, Jos. Forgham, and R. Hollings.

On Tuesday, July 18th, a meeting was held in the theatre of the College for the purpose of distributing the prizes to the students who had been successful in their competitive class-examination. Professor Williams occupied the chair, and distributed the prizes as following :—

Chemistry.—Silver Medal, presented by Prof. Wallace, Cirencester, gained by Mr. W. Lothian, Dunse.

Practical Chemistry.—Silver Medal, presented by Mr. F. King, City Analyst : Mr. Jas. Borthwick, Kirkleston. Bronze Medals, presented by Dr. S. Macadam : Messrs. A. J. Haslam, Manchester ; T. A. Rudkin, Willoughby ; Jos. Forgham, Holmes Chapel ; and S. W. Martin, Chesterfield. Certificates of Merit were gained by Messrs. W. Allan, W. Berry, A. Lennox, R. G.

* Those with the * passed with great credit.

Brizell, A. W. Middlehurst, R. Rimmer, T. Watson, D. Charnock, Jos. Purdy, and A. Watson.

Materia Medica.—Silver Medal (Highland and Agricultural Society of Scotland), Mr. A. J. Haslam, Manchester. Certificates of Merit: Messrs. Lothian and Rudkin.

Botany.—Silver Medal (H. and A. S.), Mr. Lothian, Dunse. Certificates of Merit: Messrs. Haslam, Forgham.

Parliamentary Intelligence.

House of Commons, August 15th.

RUSSIAN CATTLE IN CYPRUS.

SIR W. BARTTELOT asked the Secretary of State for War whether the statement in a letter in *The Times** of August 14, and written by Mr. George Fleming, F.R.C.V.S., was correct, that 300 head of Russian cattle had been sent from Odessa to Limasol for the use of the troops in Cyprus and in Egypt; and, considering the terrible character of the Rinderpest, and that it usually, if not invariably, followed the free import of Russian cattle, steps were being taken, or would be taken, to prevent so great a calamity to Cyprus and to Egypt as the introduction of that fatal disease?

Mr. CHILDERS.—In reply to my hon. and gallant friend, I have to say that since 1878 all supplies of beef for the troops in Cyprus have come from Odessa. The arrangements for this purpose were made in the time of the late Government, and great care has been taken to prevent any ill results, such as the introduction of Rinderpest. The measures adopted for this purpose have been completely successful, and I have no doubt will continue to be so.†

* The following is the letter referred to:—

RUSSIAN CATTLE FOR EGYPT.

To the Editor of "The Times."

SIR,—It is announced in this morning's papers that a ship had arrived at Limasol, from Odessa, with a cargo of 300 bullocks for the English Government. These animals are, I presume, for the use of the troops in Egypt, and if such be the fact, I would beg of you to allow me to point out the great danger incurred in importing Russian cattle into that country. Russia, as is only too well known, and particularly Southern Russia, is the home of the Cattle Plague, and for centuries the events of war have carried that terrible scourge far beyond her frontiers into other countries. If Russian cattle find their way into Egypt, it is almost certain (if history is to be relied upon) that the disease will accompany them; and in addition to the other horrors of war, we shall have the desolation wrought by Rinderpest. I may point out that on several occasions Egypt has been most seriously visited by the disease, not only the oxen and buffaloes perishing in multitudes, but also camels, goats, and sheep. One of these visitations is frequently and pathetically alluded to in the late Lady Duff Gordon's book on Egypt.—Yours obediently, GEORGE FLEMING, F.R.C.V.S., Army Veterinary Inspector.

† This statement is not correct. Cyprus was invaded by the Cattle Plague so recently as two years ago; and in May, 1880, of 1,540 cattle attacked, 1,447 had perished. *See* VETERINARY JOURNAL for October, 1880, p. 290.

Army Veterinary Department.

Gazette, August 8th.

Veterinary Surgeon Stuart Murray Wilson, to be Veterinary Surgeon, First Class.

The state of affairs in Egypt has necessitated the despatch of an Army Corps from England and another from India. For the service of that from England, the following officers of the Army Veterinary Department have been detailed :—Inspecting Veterinary Surgeon Meyrick (who will assume the duties and have the local rank of Principal Veterinary Surgeon), and Veterinary Surgeons Burt, Walker, Rostron, Boulter, Sartin, Hagger, Thomson, Pallin, Rayment, Matthews, Griffiths, Bennett, Smith, Case, Spooner, Burke, Mitchell, Beech, and Whitfield, with M. Anderson, Pringle, Savage, Mann, and Crowe, from India.

Veterinary Surgeons Percivall and Clayton have been sent to Italy, Ewing to Valencia, and Cox to the United States, to inspect and purchase mules.

Obituary.

THE death is reported of L. BYRNE, M.R.C.V.S., half-pay, *late* 1st Dragoon Guards, who graduated in 1842 ; also, ALEXANDER HORNE, M.R.C.V.S., August 18th, at John's Bridge, Kilkenny.

We have also received notice of the demise, at Berlin, on the evening of August 13th, of Dr. Ernst Friederich GURLT, in the 88th year of his age. Gurlt was for many years a teacher at the Berlin Veterinary School, which he joined in 1825, after obtaining his medical degree at Breslau, where he was anatomical prosector under the celebrated Otto, his dissertation for the degree being "De Venarum deformitatibus." During his long professional career, he laboured earnestly in promoting medical and veterinary science, and his efforts have been crowned with success, their value being recognised not only in Germany but in other countries. His writings are numerous, but perhaps the most important among them is the "Handbuch der Vergleichenden Anatomie der Haus-Säugethiere," the fine "Hand-Atlas der Anatomie des Pferdes" in folio, the "Lehrbuch der Vergleichenden Physiologie der Haussäugethiere," the "Anatomie der Hausvögel," the "Lehrbuch der Pathologische Anatomie," and "Ueber Thierische Missgeburten," the last part of which appeared so late as 1877. In conjunction with Hertwig, he edited the *Magazin für Thierheilkunde*, the leading professional journal in Germany, from its commencement, and to it he contributed many papers of the highest interest and importance. Gurlt's name will ever be honourably associated with the development of veterinary science in Europe, while it will enhance the reputation of a school which has been prolific in training the greatest masters of this science. Our deceased and deeply-regretted colleague was an Honorary Associate of the Royal College of Veterinary Surgeons.

Jurisprudence.

ALLEGED BREACH OF WARRANTY OF A HORSE.

In the Sheffield County Court, recently, before the judge (Mr. T. Ellison) and a jury, an action was heard, the plaintiff in which was Mr. Charles Wardlow, steel manufacturer, of Charlotte Street, and he sought to recover £50 from Mr. Richard Pears, horse dealer, of the Clough Mews, St. Mary's Road, for loss and damages alleged to have been sustained by the re-sale of an unsound horse. Mr. A. Muir Wilson appeared for the plaintiff, and Mr. J. E. Barker (instructed by Messrs. Clegg and Sons) was for the defendant. The case was tried before his Honour and a jury on the 31st of May, but the jury were unable to agree upon a verdict, and they were discharged.

Mr. Wilson, in opening his case, said it had unfortunately already occupied the attention of the Court, and therefore he wished to draw the attention of the jury particularly to the facts—facts which he believed he should be able to prove in the most indisputable manner. In the early part of January, the plaintiff being in want of a horse, went with his groom to the defendant's mews, and three were shown to him. The plaintiff was pleased with one of them, and it was ultimately agreed that he should have it for £83. Mr. Wardlow had known Mr. Pears for many years, and in the conversations which took place between them the defendant several times assured him that "the horse was perfectly sound." A veterinary surgeon's examination was offered, but the plaintiff declined it, remarking that he would take the defendant's word as to the soundness of the horse. The animal was sent to Charlotte Street, and the plaintiff after trying him a short time found that he was diseased and altogether unfit for his work. He informed the defendant, who at first seemed disposed to come to terms with him about it, but nothing came of the negotiations. Further professional advice was taken, and the plaintiff then sent the horse for sale by auction, and it realised the sum of £33 10s. Since the last hearing he (Mr. Wilson) had seen Mr. Cartledge, the leading veterinary surgeon in the town, and had ascertained that at the request of Mr. Pears he saw the horse, and he told the defendant that it was unsound. The defendant's solicitor saw Mr. Cartledge, and asked him to give evidence in support of the defendant's case, and he replied that he could not, as the horse was unsound. Mr. Pears, however, swore that he did not know the horse was unsound, whereas Mr. Cartledge, who had been subpœned to attend, would prove that he told him it was unsound when he examined it. He regarded that as a suppression of the truth on the part of the defendant. Mr. Cartledge had told him of the state of the horse, and as an honest man he ought to have brought that gentleman into court to assist in an honest settlement of the dispute. It was not a question of "snapping a verdict," but of getting at the truth. Mr. Wardlow and his groom would swear that a distinct verbal warranty was given with the horse. Mr. Pears would swear there was not; and it would be for the jury to say which they believed. With respect to the condition of the horse, he should call Mr. Cartledge and other professional witnesses, who would swear that the horse was spavined and ringboned; and against them would be called Mr. Jackson and other witnesses.

One of the jurymen at this point rose, and said, I think a great deal of this conversation might be stopped.

The Judge: Mr. Wilson is perfectly right.

The juryman: It is taking up time; that is what I thought.

The Judge: You must take up time in opening a case properly.

Mr. Wilson remarked that he did not wish to be tedious, and he concluded

by reminding the jury that it was for them to say upon the evidence whether a warranty was given with the horse, and, if so, whether there had been a breach of it.

The plaintiff and his groom, George W. Morris, were called, and gave evidence as to the purchase of the horse, the verbal warranty that was given with it, and to the subsequent discovery that it was unsound.

Mr. Thomas Fletcher, veterinary surgeon, proved that the first time he saw the horse it was suffering from Spavin and Ringbone of long standing. In fact, it had not a sound leg to stand on.

Mr. J. T. Thompson, veterinary surgeon, said the horse had Spavin on two legs, Ringbones on three legs, a Sidebone, and a bony enlargement. It must have been so diseased when the plaintiff bought it.—By Mr. Barker: It was quite possible for a horse with these ailments to go all right for a time, but it would eventually fall lame.

Mr. B. Cartledge, ex-president of the Royal College of Veterinary Surgeons, was called, and said he examined the horse at the defendant's mews on the 17th and the 29th of April. It was unsound in both hocks, there being Bone Spavin in the near hock. It had existed three or four months, and it might have been longer.—By Mr. Barker: There was Bone Spavin on the near hock, and there was pre-disposition to it on the other hock. If the one hock had been as good as the other he should not have rejected the horse, but should have passed it with a proviso. He saw no Ringbones.—The Judge: Did you examine the horse for Ringbones?—Mr. Cartledge: Yes, generally.—Mr. Barker: Did you see any Ringbones?—Mr. Cartledge: No.—Or enlarged knee?—No, nothing to attract my attention. The horse might be a very useful one if it remained free from lameness.

Mr. T. C. Fletcher, veterinary surgeon, was also called, and he expressed the confident opinion that the horse had all the ailments described by Mr. Thompson.

This concluded the case for the plaintiff.

Mr. Barker, in defence, said there was a dispute between Mr. Wardlow and Mr. Pears, and he should be very sorry if the jury had to discuss the invidious task of saying which of them was speaking the truth. It was quite possible that Mr. Wardlow might have thought that a warranty was given with the horse when Mr. Pears intended nothing of the sort. If the horse was such as the witnesses had described, there was enough evidence to justify the jury in giving a verdict for the plaintiff, not on the ground of breach of warranty, but on the ground of misrepresentation. Assuming the horse to have been sold with a warranty, the jury had to decide whether or not it was lame on the day it was sold. It did not matter if it became lame afterwards; with that they had nothing to do. Proceeding to analyse the evidence, the learned counsel reminded the jury that three of the professional witnesses who had been called swore that the horse was suffering from Spavin, Ringbones, Sidebones, and enlargement. Mr. Cartledge had been called, and he had directly contradicted the evidence of the other three. He should call three witnesses, who would prove that Mr. Cartledge was wrong, and that the horse was perfectly sound. His case was that the horse was sound when sold, but that in consequence of the inflammatory action subsequently set up, lameness supervened.

The plaintiff and several other witnesses were called in support of the defendant's case, and from their evidence the horse seemed to have had at least several owners. Mr. Marshall, of Leeds, bought it in December, and he sold it to Mr. Pears for £62. He sold it to Mr. Wardlow for £83, and when put up by auction it realised £33 10s. Mr. Pears took it to Northallerton, and sold it to Mr. Goddard, of London, for £60. Mr. Goddard has since disposed of it to Mr. A. Stainton, veterinary surgeon, of Holloway, for

£50; and he has sold it to a medical gentleman, who is now using the horse. These witnesses, as well as Mr. W. Jackson, veterinary surgeon, and Mr. Joseph Axe, veterinary surgeon, Doncaster, all asserted that the horse was sound, and free from Spavin. It had strong, rough hocks, and the roughness might have been mistaken for Spavin.

Mr. Wilson, in summing up his case to the jury, commented upon the fact that the defendant had abandoned his assertion that there was no warranty, and said he evidently felt that the case was so conclusively proved against him on that point that it would be no longer safe to deny it.

His Honour told the jury that the sole question they had to decide was, whether or not the horse was unsound on the 6th January, when it was sold to the plaintiff; or was he subject to any infirmity—Spavin or otherwise—that made him lame shortly afterwards.

The jury returned a verdict for the plaintiff for the amount claimed, with costs.

Notes and News.

A FOAL GIVING MILK.—In June last (says the *Carlisle Patriot*), a mare belonging to Mr. Ellwood, of Kingmoor, dropped a filly foal, which, it was immediately noticed, had enlarged milk glands; after careful examination, milk was drawn from the udders—no less than three pints that day. About a pint was taken from the foal daily up to Saturday last, when there was a considerable falling off. The cause of this lacteal secretion was due to the abnormal condition of the umbilical cord, which was open after birth, and the foal having undergone an operation the other day on this account, the secretion has been discontinued. Neither Mr. Carlisle nor Mr. Bell, who attended the foal, have met with a similar freak of nature before.—In the *London Medical Record* for June, Dr. V. Idelson contributes a notice of milk being secreted in a boy of ten months. He says: "Dr. Lesenevich (*Vracheb Vedom.*, No. 10, 1882) has under his observation a boy of ten months old, whose both mammary glands secrete a milky fluid, and have done so since the child's birth, the glands have the shape of roundish soft tumors, of the size of a large nut. On moderate pressure a few drops of milk ooze out; on rather strong compression of the gland, the milk is ejected in the form of a thin jet, reaching the height of about three feet. When the glands are left untouched during two or three hours, the secretion oozes by itself, leaving grey spots on the linen. The fluid gathered in a wine-glass did not differ in any way from a woman's milk."

A BLOOD DIET FOR THE HERBIVORA.—The fact that all animals, even the herbivora, are at first nourished on a diet of milk, which must be considered as purely animal, led M. Regnard to suggest that an animal diet might be employed with advantage at a subsequent epoch in their history. The idea is not new, but attempts to verify it by, for instance, feeding horses on meat, raw or cooked, invariably failed in consequence of the disgust which this diet occasioned. It occurred, however, to M. Regnard that an animal substance might be utilised—certainly highly nutritious, of which tons are wasted weekly—viz., blood. The problem was how to present it to the animal in such a form as not to occasion disgust. The blood was heated to 100 C, and the coagulum thus obtained was pressed and rapidly dried in a stove, and then powdered in a coffee-mill. It was found to keep well, and to be destitute of odour and of taste, and was given, mixed with other food, in doses varying from ten to eighty grammes daily. The experiments were made on lambs which had been abandoned by their mothers. Three lambs were kept on

the ordinary diet of beetroot, hay, etc., and to three others the powdered blood was given. The first steadily lost flesh, while the latter increased to three times the original weight, and connoisseurs declared that they had never seen such fine lambs of the same age. The animals surpassed their fellows which had been suckled by their dams both in weight and size, and their coat of wool became doubled in thickness. Experiments of the same kind are now in progress with calves, and promise to be as successful as the others. It will certainly be a matter of high importance if the vast amount of nutriment now almost entirely wasted can be thus utilised. The saving of milk in rearing calves, for instance, would alone be a most valuable item. It appears that this system of alimentation is applicable also to man. In the case of a rickety child of eighteen months the results are said to have been most encouraging.—*The Lancet.*

TUBERCULOSIS.—The city physician of Vienna, Dr. Kammerer, has addressed a report to the magistrates of that city on the dangers which threaten the health and life of the population, through animals affected with Tuberculosis. The victims are insidiously struck down, says Dr. Kammerer, through two of the most important articles of daily diet—milk and meat. The milk of cows with Tuberculosis acts as an unconscious vaccination upon adults and children who partake of it, and in the case of the latter the seed of Tuberculosis is being imperceptibly sown amongst thousands in the great towns. Dr. Kammerer regards infection by this channel as being quite as fruitful a source of the disease amongst the young as hereditary, to which it is usually traced. He regards it as exceedingly doubtful whether boiling, or roasting ever so thoroughly, can effectually eradicate the germs of infection in the flesh of tuberculous animals.

TRICHINOSIS.—This parasitic disease has recently attacked eighty soldiers and a number of civilians in the town of Cöln, Germany. The majority of the cases appear to have been due to eating uncooked sausages, the manufacturer himself suffering from the malady. No deaths had been reported.

VETERINARY HONOURS.—It gives us much pleasure to learn that our distinguished colleague, M. Zundel, of Strasbourg, was in June last elected a corresponding member of the Belgian Academy of Medicine. Professor Bouley, Inspector of the French Veterinary Schools, has been elected President of the Acclimatisation Society of France. The Paris Academy of Medicine has awarded the Barbier Prize of 6,000 francs (£250) to Professor Toussaint, for his researches in Anthrax, Fowl Cholera, and experimental Acute Septicæmia. At the graduation ceremony of the Edinburgh University, held on August 1st, Mr. J. McFadyean, Professor of Anatomy in the Dick Veterinary College, received the degree of Bachelor of Medicine and Master in Surgery. At the distribution of prizes and conferring of degrees in the Toronto University on June 8th, in the Faculty of Medicine, the University silver medal was bestowed on J. T. Duncan, Professor in the Ontario Veterinary College.

Correspondence, etc.

THE FLEMING TESTIMONIAL.

DEAR SIR,—At the annual meeting of the Royal College of Veterinary Surgeons in May last, it was announced that a strong feeling existed throughout the profession that a testimonial should be presented to Mr. George

Fleming. This announcement was received with enthusiasm. It may be truly said that Mr. Fleming has consecrated his life to the profession, devoting all his energies and powers to raising its dignity and extending its usefulness. His writings, which are very numerous, are of the highest order, and reflect not only the greatest honour on him, but upon the profession at large. As evidence of the position he holds, it may be mentioned that he has been elected president, fellow, associate, or corresponding member of twenty-four learned and scientific societies in this country, on the Continent, and in America and Australia. And as a proof of the estimation in which he is held by the profession here, and the confidence placed in him, he has been elected President of the Royal College of Veterinary Surgeons for three years in succession.

To Mr. Fleming we are indebted for the "Veterinary Surgeons' Act," a measure which places the profession in its proper place as a scientific body, and which in time will be esteemed one of the greatest boons ever conferred upon it in this country, and indirectly, perhaps, in all English-speaking countries, while it will prove of immense importance to the public and to humanity. This he obtained at a great amount of labour and anxiety. He organized and headed the important deputation which recently waited upon the President of the Privy Council, to solicit Government assistance in the promotion of veterinary science.

These splendid services, we, the undersigned, think deserving something more than our warmest thanks, and we earnestly ask you to join us in recognising them, by presenting him with a testimonial in the form of a full-length portrait, to be hung in the Council Chamber of the Royal College of Veterinary Surgeons.

It has been decided that the amounts of subscription are to be unlimited.

Subscriptions are now received by, and are requested to be sent to, the Honorary Treasurer, Mr. H. J. Cartwright, F.R.C.V.S., Veterinary Surgeon, Wolverhampton.

The Executive Committee is composed as follows: President, Thomas Greaves, Manchester; Treasurer, Henry J. Cartwright, Wolverhampton; Hon. Secretary, John Bean Martin, Rochester; Professor William Robertson; Ex-Professor James Beart Simonds; Professor George Thomas Brown; Professor James McCall; Professor Thomas Walley; James Collins, Esq., Principal Veterinary Surgeon to the Army; Major-General Sir Frederick Fitzwygram, Bart.; E. C. Dray, Esq.; Wm. Whittle, Esq.; T. H. Santy, Esq.; J. D. Overed, Esq.; Peter Taylor, Esq.; M. J. Harpley, Esq.; H. L. Simpson, Esq.; F. W. Wragg, Esq.; T. H. Simcocks, Esq.; J. J. Sperring, Esq.; James Lambert, Esq.; T. D. Lambert, Esq.; J. W. Mulvey, Esq.; J. D. Barford, Esq.; G. Kidney, Esq.; Edward Stanley, Esq.; Wm. Broughton, Esq.; R. Rutherford, Esq.; John Hammond, Esq.; H. Olver, Esq.; J. H. Ferguson, Esq.; J. W. T. Moore, Esq.; Wm. Leather, Esq.; Capt. B. H. Russell; Alfred Broad, Esq.; Andrew Spreull, Esq.; James Freeman, Esq.; Jos. Freeman, Esq.; John Freeman, Esq.; John Ferris, Esq.; J. Woodger, Junr., Esq.; C. W. Elam.

The Veterinary Medical Associations throughout the land have taken up the subject most heartily. The President and Secretary of each Association are requested to kindly act as centres for their particular district, and forward all subscriptions to the Treasurer of the Fund.

Professor McCall says, "No man deserves better at the hands of his professional brethren than Mr. Fleming, and I hope the testimonial will be in keeping with his merits."

I am, yours faithfully,

J. B. MARTIN, M.R.C.V.S., *Hon. Sec.*

Rochester, *June 10th*, 1882.

NEW REMEDIES.

SIR,—I had no intention whatever of misquoting Mr. Maynard's statements to suit my own ends, nor do I see that the accusation put forward by him is warranted. I still say that, according to his statement, the animal was cured, and I think he must admit that a cow which has suffered from any acute disease (such as Pyæmia), when "found quite comfortable and chewing the cud," is to all intents and purposes convalescent, and, so far as the disease is concerned, *cured.*

I have never said the cases were fictitious; I did hint at a possible or probable error in diagnosis, and how far the insinuation is justifiable I leave for others to decide.

My quotation from Mackey and Co.'s label *was not a mis-statement*, as you, Mr. Editor, know. I gummed the clipping therefrom to my letter, and I may say that it was received direct from Messrs. Mackey and Co., after the publication of Mr. Maynard's reply to my first letter. Why some should be favoured with the formula, and others not, is best known to the firm; and how long the formula has been published will be known to those who have been in the habit of using the nostrum. Even with the published formula before the profession, it may be necessary for Mr. Maynard to give his "chapter and verse" description of the other cases, and probably many more, before his *dicta* can be accepted. I should be much surprised if "Pharmacon" is the only individual who is sceptical as to the virtues of the compound, as set forth by Mr. Maynard.

I note the statements regarding the superiority of quinquinine over quinine, but I fail to see any proof thereof.

In my opinion, Mr. Maynard might with advantage consult some good medical dictionary (as Dunglison's) on the correct method of spelling my *nom de plume* and a host of pharmaceutical terms derived from the same source.

Mr. Maynard's "suspicions" are unfounded and erroneous, as I claim no pretension whatever to rank among the *literati*, and I am inclined to think his would-be sarcastic remarks are much more applicable at home.

Whether Mr. Maynard or I have been the more "egotistical," "unjust," "untruthful," "wilfully false," "possessed of no small self-importance," "and more than a *trace* of vanity," etc., I am quite willing to leave to the opinion of those who have read the correspondence.

Yours, etc.,

PHARMACON.

[As no interest or benefit can now be afforded our readers by the correspondence on this subject, we think it should cease.]

OUR VETERINARY DEPARTMENT.

SIR,—Under the above heading, in a weekly paper published in Dublin, appears the following, which shows the undignified position a veterinary surgeon sometimes accepts, from pecuniary or other motives.

"We have just completed arrangements with Mr. John J. Sperring, V.S., F.R.C.V.S., to take charge of our veterinary department. This gentleman will each week answer all queries addressed to us on veterinary treatment, and afford other valuable information to the readers of this journal.

Letters should be addressed, 'Veterinary Department, *Sport* Office, 83, Middle Abbey Street, Dublin.'"

We do not find medical men prescribing for patients through the columns of a public newspaper, but unfortunately there are some veterinary surgeons who do not appear to know what is discreditable to themselves and injurious to their profession.

In the VETERINARY JOURNAL for February, 1878, you, Mr. Editor, rightly remark: "It is true that certain agricultural and sporting papers have a 'Veterinary' Editor, or as an American paper has it, a 'horse-doctor,' on their staff, who gives advice free, and prescribes for injuries, derangements, and maladies *which he has not seen*, and which may then be under the treatment of some qualified member of the veterinary profession, the owner being desirous of knowing from the learned editor whether such treatment is right. *We need scarcely say that we think it undignified and unworthy the position of veterinary surgeons to act in this manner.*"

Those members of the profession, and particularly Fellows of the Royal College of Veterinary Surgeons, who transgress professional ethics, deserve censure from their brethren; and these remarks are made in the hope that they may yet be made to mend their ways.

Dublin, *August* 2. Yours faithfully,

J. H. JONES, *Government Veterinary Inspector.*

Communications, Books, Journals, etc., Received.

Communications have been received from J. Ferris, A.V.D., Longford; J. H. Jones, Dublin; R. W. Burke, A.V.D., Limerick; B. Cartledge, Sheffield; W. Williams, Edinburgh; M. J. Treacy, Indianapolis, U.S.A.; G. A. J. Muir, Wexford; "Pharmacon"; W. Woods, Wigan; A. Broad, London; D. Dudgeon, Sunderland; A. W. Hill, London; E. Batt, London; A. Kershaw, Lincolnshire.

BOOKS AND PAMPHLETS: Versuche über die Wirkungsweise der Milzbrandimpfungen Nach dem Pasteur'schen Ferfahren; *M. E. Decroix*, Neuf Cas de Guerison de la Rage; *R. S. Reynolds*, An Essay on the Breeding and Management of Draught Horses; Transactions of the Epidemiological Society of London; *C. A. Gordon*, Remarks on Experimental Pharmacology; *J. D. B. Stillman*, The Horse in Motion; *G. S. Heatley*, The Horse-Owner's Safeguard; *L. Brusasco*, Carbonchio; *J. B. Martin*, The Breeding of Horses.

JOURNALS, ETC.: *Archives Vétérinaire; Wochenschrift für Thierheilkunde und Viehzucht; La Clinica Veterinaria; Squire; Recueil de Méd. Vétérinaire; Journal de Médecine Vétérinaire et de Zootechnie; Sanitarian; Repertorium der Thierheilkunde; Zeitschrift für Vergleichende Augenheilkunde; La Presse Vétérinaire; Live Stock Journal; Der Thierarzt; Proceedings of the Medical Society of Kings; Oesterreichische Vierteljahresschrift für Wissenschaftliche Veterinärkunde; American Veterinary Review; Echo Vétérinaire; Annales de Médecine Vétérinaire; Australasian Veterinary Journal; Chicago Live Stock Journal; Tidskrift jör Veterinär-Medicin; Revue Vétérinaire; Field; Nature; Edinburgh Medical Journal; Medical Press and Circular.*

NEWSPAPERS: *Sport; Toronto Evening Globe; Nouvelliste de Seine-et-Marne; Sunderland Times; Sunderland Daily Echo; Leeds Mercury.*